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WAR AND POSTWAR PSYCHOSES

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For some time the people of the United States realized, when seriously considering world problems, that war was inevitable. However, there was always present the hope that such a tragedy could be avoided and for this reason the aggressive feeling necessary for the successful approach to a problem was lacking. The sudden onset of hostilities aroused this feeling of aggressiveness with a full determination to victoriously accomplish the task assigned to the entire nation. From a psychiatric viewpoint the emotional reactions in the allied countries are much healthier than that encountered in the axis since it is composed of aggression without fear.

However, aggressiveness caused by anger cannot endure indefinitely since anger is an intense but self-limiting emotion. The purpose behind the aggressiveness must assume a more idealistic aspect or the people will become bored with a situation which no longer causes emotional reactions because continued stimulation has lost its effectiveness. However, we must not forget that a nation trained to implicit obedience working under a yoke of inferiority and fear can fight tenaciously and with aggression. But this aggression is not as enduring since the presence of fear causes a conflict which lowers individual efficiency under prolonged stress. People who have enjoyed freedom and individual rights do not become afraid when this freedom is threatened but become aggressive without fear, since each individual is fighting for something which belongs to him as well as for the ideals of a nation. Let us state it this way: free people react with aggression due to anger. Totalitarian people react with aggression due to fear. Of the two, anger

is the more healthy emotion and therefore the more productive and enduring from a psychological as well as a physiological viewpoint. With the alleviation of anger, boredom is going to increase with the forced abstaining from luxuries and entertainment if we are to produce war material in sufficient amounts. The high fervor of patriotism will be replaced by ennui, always a fertile soil for the production of psychological trauma.

During this war it has, as yet, been impossible to obtain any actual statistical data regarding the effects upon the mental health of the civilian. Most of our actual information must be obtained from the experiences of former wars. Added to this must be conjecture based on our knowledge of expected psychological reaction in different personality types during periods of stress and danger, for it must be admitted that this war, with its highly mechanized aspect offers a more serious problem than the last war. Also present is the feeling of futility of the civilian when he is faced by an air attack, a danger which he, as an individual, has no power to eliminate. In this situation he must always be the pursued, never being able to use his aggressive and fighting potentialities. The degree to which the average individual will be affected will depend upon the amount of confidence which he has in the protection offered him, and the ability to use this protection, as well as a definite knowledge as to the degree of danger which actually exists. Before we discuss what to expect among our civilian population and before outlining a plan as how to avoid emotional casualties, let us consider some of the reports which we have in regard to this war and previous wars. As is to be expected, most of the reports in regard to this war are from England.

In statistics from Massachusetts, it was found among the civilian population that there was an increase in the number of peo-

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ple suffering from mental disorders during the first World War. This was contrary to the condition found in England where the populace suffered more severely and longer. It was found that there was a still greater increase in this country after demobilization. However, on careful study it was found that the direct etiology was due to fear of economic insecurity rather than actual war. It would seem that people suffer from mental disorder when the acquired and more civilized aspects of living are threatened, rather than when the more primitive factors of human life are attacked, as in the case of actual combat. It was these higher factors that played the greater role among the civilian population during the first World War. The situation as it exists today is different, since we are all threatened to a certain extent with actual combat. The noise, confusion and danger in this war are much greater. An article in the British Medical Journal by Dr. Emilio Mira discusses the effect of modern warfare on the civilian population, in Republican Spain. He felt that the fears from which the average citizen suffered could be classified in four groups, namely, that he or his family might be killed or wounded during bombardment; that he might be called to serve at the front; that he and his family might starve from lack of food; or that he might be ruined economically. The last two factors proved the more important. It was found that the number of people killed by 250 air raids during thirty months did not exceed the number killed by street accidents (mainly automobiles). The lack of proper and sufficient food caused much more anxiety. The populace quickly realized that the danger was not great and the author states "I have seen people at the cinema in Madrid come out on the balcony to bet on the nature of a shell as they watched the flash of its explosion." Both in the combatant and non-combatant groups it was not necessary to use more hospital beds for psychiatric cases than during times of peace. It is true that the first bombardments sent the more timid people to the relative safety of the country where the emotional strain was not as great. The children were found to be less fearful

than the adults, either because they did not realize the danger or because they felt adequately protected. Of course, it is impossible to tell whether these same children will show some maladjustment in later years based on the unnatural environmental situation of the war.

Of the cases that were admitted to hospitals because of conditions produced by the war, certain definite types were recognized. The cases in which the war was the precipitating factor rather than the etiological factor were not considered. There were found a few cases of malignant anxiety in which the patients appeared to be almost in shock. These patients showed an increase in pulse and respiration, were perplexed and anguished, often showing no spontaneous motion. It was thought that this condition was produced by lability of the sympathetic nervous system on which was superimposed a sudden severe mental shock while the patients were in a fatigued condition. This, accompanied by delay in starting treatment, resulted in the malignant anxiety which often resulted in death.

The majority of cases during the Spanish War were neurotic anxiety types which were marked by trembling, shivering, inertia, depression, and at times restlessness. The condition rapidly disappeared with mild treatment, isolation, sedation and reassurance. No psychotherapy of intensive type was needed to bring about complete recovery.

During the present war, Dr. M. Greenwood found that the boredom following the first activity was a fertile field for adverse mass psychology behavior, particularly among those engaged in civilian defense. This often results in the spreading of adverse and unfounded rumors which so often follows boredom and discontentment in any group. To avoid this he feels that something must be offered to these people to keep them mentally stimulated and to provide productive amusement.

In England among the civilian population as a whole there occurred rather definite attitudes which can be expected in any war. Dr. Maurice Wright discusses this. During the first weeks there was a state of appre-

hension accompanied by the spread of wild rumors. This was accompanied by evidences of acute anxiety based on economic insecurity. Increased suggestibility contributed to the spread of false and often ridiculous rumors. As the anxiety seemed to lessen, other reactions occurred. In fact, the anxiety was merely suppressed and various changes occurred in the general behavior which were merely mental defenses to prevent the anxiety from returning to the conscious mind. This re-adaption was apparent in two ways. The one resulted in cruelty, sexual immorality, drinking and excessive spending of money with the attitude of "let us enjoy life to its full since we do not know what tomorrow will bring." The other method was one of strict self-discipline with a result of a building up of personal ideals through hard work. Both of these reactions, one adverse and one gainful, were based on an escape from feelings of anxiety. Few people carried on their regular peacetime occupation without at least some reaction. Dr. Wright felt it necessary to take these reactions into consideration in order that adverse behavior may be guarded against and prevented and that the reactions be led along constructive lines.

The consensus of British opinion was that in those cases who developed an active psychosis the war was merely the precipitating factor, and that these people would have eventually become psychotic under some other strain. It was felt that many of the civilian population were suppressing the natural feeling of fear which might later develop into neurotic states, after the distracting aspects of the war had passed. Of forty-six cases admitted to the Knowles Mental Hospital in succession when air raids were in progress, it was felt that the raid played a major part in the etiology in only four cases while in thirty-six cases it was determined as being entirely irrelevant. One authority reported a tendency for the socially unfit to gravitate towards the hospitals for protection during times of stress. These cases cannot be considered as being war casualties since the conditions existed before the onset of hostilities and were chronic in nature. As the war progressed in England it was felt that the loss

of sleep combined with poor ventilation of the average air raid shelter were as important a factor in the production of emotional upsets as the air raid itself. Those who were psychotic previous to the onset of the war were not affected in any way. They seemed to be completely indifferent to the situation, being too engrossed with their own thoughts to be disturbed.

Dr. F. Brown feels that patients suffering from anxiety states and psychoneurotic depressions showed improvement because of the strong stimulus to outside interest. These patients often showed great bravery in time of danger, although they would have been unable to stand the stress and often monotonous routine of the inducted forces.

Acute transient hysterical reactions were noted in which there was semi-stupor. Transient paralysis and some tremors were noted. These patients were forced to remain in the hospital for two or three days but they then seemed to recover completely.

Definite psychoneuroses, usually of the hysterical type, showing symptoms of hysterical paralysis or amnesias, occurring in people who were previously perfectly normal, were rare but did occur in cases who were forced to undergo an exceptionally severe and horrible shock. In order to cure such cases an analysis was conducted, frequently under deep narcosis.

Major psychosis when developing in an apparently normal person usually revealed, on close studying, that there had always been a personality deviation present. A few of the more intelligent citizens showed transient paranoid reactions. These were usually conscientious people who overestimated the amount of responsibility they could carry. Fatigue and lack of proper eating were contributory factors. The onset was more gradual, the condition being preceded by a period of insomnia.

Some civilians who suffered from mild feelings of insecurity were found to suffer depressive reactions which were precipitated by the war. Also, some cases who had previously suffered from manic depressive psychoses had a recurrence of the condition as would naturally be expected.

Cases of actual organic psychoses due to brain trauma were, of course, admitted and could be considered as direct casualties of the war.

Elderly patients who were brought to the hospital often suddenly developed symptoms of senile psychoses with disorientation and rapid failure of mental faculties. This picture is no different than that found during times of peace when the elderly patient is suddenly removed from his accustomed environment and placed in the foreign environment of an institution.

From all the information obtainable of the psychiatric casualties among civilians during hostilities it would seem that there is little danger of an increase in the number of the actually insane. Anxiety states will occur which will require treatment for a few hours but these will decrease as the population becomes habituated to the war.

The chief problem during the war is that of maintaining the high morale of the group as a whole to avoid adverse psychological reactions, rather than one of acute psychotic attacks. There must be an intelligent utilization of all the necessary human outlets for all groups if stability of the personality is to be maintained. The standards of living in the United States have been the highest of that in the world. We have come to regard many luxuries as necessities. Many things must be curtailed from the daily life of the citizen. During the first few weeks of high fervor and patriotism there will be little adverse reaction to these minor hardships; but the civilian is not under the same stimulation as the man in the service who is either fighting or preparing for such.

Recently, there have come reports from England of a rather alarming increase in the amount of delinquency found among children and adolescents. This problem has become so severe that it is a subject for special study. As yet we can only speculate as to the cause of this adverse reaction. It may be considered as the result of a broken home situation with one or both parents missing or a complete disruption of the family group. Yet, since this has become the rule rather than the exception in life in London it would seem

that the traumatic effect on the mental life of the child would be minimized. This observation is based on the theory that adverse behavior problems occur in those children whose life pattern differs from the group. The sudden and complete breaking down of all social barriers may be partially the cause since the child is unable to assimilate such a radical change if it occurs too quickly, even if the ultimate result of the change is for the good of the human race. One probable cause is the fact that these children are leading a life of intense insecurity without adequate adult guidance. Whether this is a temporary reaction is still questionable but the subject still requires intensive study by the psychiatrist and sociologist.

The individual as he realizes that the threat to his life is not very great is apt to become bored and impatient as he is forced to continue to abstain from his customary type of recreation. He also does not live as completely in the present as the armed man. The civilian has time to think of the economic threat in the postwar period, as well as of the possible loss of his home. Under this continued anxiety, which he attempts to suppress, he loses a great part of his idealization and is apt to become extremely self centered. It is this reaction which I feel must be combated if we are to keep our civilian war activities at the highest and most efficient level and if we are to avoid postwar catastrophe.

The problem is one which must be cared for in each community and much that is done must be experimental in nature. Study groups, lectures and free discussion groups are often a satisfactory outlet for the gregarious, aggressive and acquisitive aspects of human nature. Many of the more intelligent and more stable individuals will establish such outlets of their own accord but the average individual must be induced to join such activities by proving that they are of interest and value. The radio will be undoubtedly of great value as a source of entertainment and education.

In each community there will be a few maladjusted individuals who may attempt to create states of panic. To the present day this has been difficult to do because of the

average American's confidence in the honesty of his government. He has been trained in habits of tolerance, good judgment and individual freedom. Our people will be readily taught to disregard false rumors which are the foundation of panic states. If the average American is intolerant of one thing, that is intolerance itself. They know that they are fighting for a system of living which to the present day has been the most satisfactory in the world. They will realize that to retain this way of living they must, for the present, make material sacrifices. But it is the duty of each community to keep high the morale of each individual by providing constructive outlets.

To avoid the greater danger of emotional maladjustment based on a fear of economic insecurity each individual must realize that we have learned valuable lessons from the first World War. Our government is aware of the dangers of the postwar period and are already considering the problem of postwar readjustment. If our standards of living must be lowered we must accept this as part of a worthwhile sacrifice, but let us not forget that our wartime standard of living will still be higher than that of other countries in times of peace.

The physician, particularly the psychiatrist, is being challenged in the second World War as he never has been before. For a time after the last war the entire world seemed to be going through a period during which the population as a whole seemed to be suffering from a mental illness. When a physician treats a single organ in the body that is diseased he hopes to rehabilitate the entire organism. The same problem is presented in national mental health. Each individual is a unit and we can only create national adjustment as a whole if we consider each unit of which the nation is composed. The perilous period through which the nation is now passing and the equally difficult period of post-war adjustment can be met in a nationally sane manner only if each individual man or woman who has normal native intellectual endowments can be persuaded to use his or her abilities to create individual as well as environmental adjustment. Only the well ad-

justed individuals can guide and supervise the maladjusted, the borderline and the feeble-minded groups which compose such a large percentage of the population. The physician can do his share in preventing further war by teaching emotional control and the avoidance of bigotry and prejudice. The people must be taught to enter the postwar period with a spirit of altruism and human interrelationships.

RESULTS OF LOBOTOMIES AT THE DELAWARE STATE HOSPITAL

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At the present time it would seem feasible to review the results obtained from the lobotomies performed at the Delaware State Hospital. It has always been difficult to evaluate with any degree of accuracy any improvement obtained from the treatment of the functional psychoses, since there is no established norm as there is in physical diseases. Should it be possible to develop an exact criterion as to what a truly normal personality is, it would be necessary to recognize the fact that all individuals would show some deviation from this norm, varying in degree, in the same manner as all individuals show some deviation from the ideal physical state. The variation in the concept of insanity is clearly shown by the differences in attitude taken by the legal and the medical professions as to what actually constitutes a diseased mind. Moreover, every individual has his own impression as to what constitutes mental health, particularly when milder deviations of personal adjustment occur. Psychiatrists have no measuring rod to use in determining the type or degree of the functional psychotic states, such as abnormal laboratory or X-ray findings. Partly for this reason there has been some hesitancy in using the more radical therapeutic measures in the milder types of mental diseases which do not completely incapacitate the individual, but which make his life more or less burdensome to himself or to those who are closely associated with him. However, there are certain cases of mental illness for whom life is continual agony, who

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are a source of sorrow to those intimately related to them, and who are an almost insolvable therapeutic problem for the psychiatrists and an economic liability to the institutions provided for their care. In such cases radical procedures, even if still in an experimental stage, seem justified in order to make life more tolerable for the patient and to relieve the family and the public of a severe economic burden. True, it is possible that later the treatment may be abandoned if it is found that the results do not justify the risk. These results cannot be definitely determined in the laboratory by animal experimentation, since there is no method of evaluating the minor psychiatric reactions of the lower animal as can be done in the human. It can be estimated whether actual brain damage results but if this damage, when it does occur, is harmful to the psyche or not, and if the harm outweighs the favorable results can only be determined if the treatment is given to the human.

Brain surgery, in functional psychiatric cases, is only resorted to after other milder and then more drastic therapeutic procedures have been attempted. At the Delaware State Hospital lobotomies are only done after an attempt has been made to obtain favorable therapeutic results by means of electroshock. It is felt that no mutilating operation should be performed until all other methods of treatment had been tried and had failed. When, after extensive therapy, the patient shows no improvement a lobotomy should be done before deterioration occurs. Only by careful study of the patient, particularly in cases of dementia praecox, can it be determined whether sufficient contact with reality still remains so that a more satisfactory post-operative social adjustment can be hoped for. In our cases of so-called completely deteriorated dementia praecox the improvement has been so slight that it has been almost negligible. Dr. Edward Strecher has had better results, but his cases were probably inherently better endowed mentally. However, we have only attempted the operation on this type of case during the last year and there still remains time for some improvement. Successful results depend not so much on the type of

psychoses as on the type of symptoms presented. Those patients who show evidence of agitation, depression, fear, worry, assaultiveness and paranoid reactions seem to have a much better prognosis for social adjustment.

It must always be remembered that the operation does not cure the disease but merely relieves the incapacitating symptoms, so that the patient can ignore the psychiatric elements and adjust himself to his environment. The operation is definitely mutilating, a small portion of the frontal lobe is removed, and there is no method of repair, once the step has been taken. The results obtained have been, on the whole favorable except in those cases, as suggested before, in which the deteriorating process has developed to such an extent that social adjustment was only possible at a very low level. In such cases, although slightly improved, the meagre results did not seem to justify the operative risk nor the expense involved in carrying out the surgical procedure.

During the past four years nineteen patients have been operated upon at the Delaware State Hospital, the operations being performed by Dr. Francis C. Grant, of Philadelphia. Realizing that the operation was not curative, that it was still in the experimental stage, and that there was involved a certain amount of danger for the patient, fewer operations were done than would have been the case had the procedure been less radical. Age did not play a role in the selection of cases except in such who might be considered definitely in the senile period of life. There were no physical contra-indications except those which would preclude the use of a general anesthetic. In all cases avertin was used as the basic anesthesia, although some surgeons have used a local anesthetic successfully, noting the reaction of the patient as the operation proceeded.

Of the nineteen cases operated upon at the Delaware State Hospital, 10 could be classified among the affective disorders. The ages ranged between thirty and sixty-five years. Of these eight were able to return home. Those eight cases were all depressed cases whose symptoms were gradually becoming worse in spite of all therapy, one having been

a patient of the Delaware State Hospital for over five years. Six of these on returning home adjusted at the pre-psychotic level and have continued to do so. The other two cases became euphoric and lost a certain amount of ethical restraint, although one became partially self-supporting. The other took over some household duties but was later returned to the hospital in a mild manic state from which she is now recovering. Of the other two affective disorders, one, who had been in an agitated depressed state for over four years, became definitely maniacal. This woman, sixty-three years old at the time of operation, was also suffering from arteriosclerosis and died a year and a half later from a cerebral hemorrhage. The tenth case was suffering from a chronic manic condition with marked tendency towards violence and destructiveness. A lobotomy was done about three weeks ago, since which she has been quiet, cooperative and in good contact with her environment. Arrangements will be made for her to leave the hospital within a short time.

Of the other nine cases, one was a depressed case, agitated with many somatic complaints for which no physical basis could be found. After remaining in the hospital for two years a lobotomy was done. Eight days after operation she died without having regained consciousness. Autopsy showed some hemorrhage in the fourth ventricle and toxic degeneration of the liver, apparently due to avertin.

The remaining eight cases were diagnosed dementia praecox; four of these were of the paranoid type and frequently assaultive. These four have shown the most marked improvement in the praecox group. All had been patients at the hospital for many years. At the present time one is working daily on the hospital farm. Another young woman is now able to visit her home and has resumed her pre-psychotic interest in music. A third works daily in the art department finishing any work which he has started. The fourth patient still remains introverted but is more amenable to hospital life and takes more interest in her personal appearance. The other four cases were either of the hebephrenic or sim-

ple type. These cases showed little improvement from an individual viewpoint. However, the ward adjustment became better and they presented less of a problem since they no longer were destructive.

In resume, we can say that the majority of the patients improve after the operation. However, the affective group have a better chance to become socially rehabilitated. We have been fortunate in having a very low death rate. The patients themselves are pleased with the results.

KLEPTOMANIA

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The attention of the author was drawn to the interesting subject of kleptomania by recent study of a case that appeared to be associated with petit mal epilepsy and that responded favorably to anti-convulsive therapy.

Kleptomania may be defined as an irresistible impulse to steal without any real desire for the thing stolen. A survey of the literature reveals much difference of opinion regarding the nature of the condition. Some authors use the term rather loosely while others assign a very limited meaning and consider the condition extremely rare. A. Wimmer, for example, thinks true kleptomania may be more an ideal concept than an actuality. Others classify it as comparable in frequency to true paranoia.

We are reminded by several writers that kleptomania is a symptom or a symptom complex and not a disease in itself. It is generally considered that in the majority of cases kleptomania occurs as a symptom of compulsion neurosis or psychasthenia, and that it should be accompanied by other neurotic symptoms.

Sexual implications of kleptomania are pointed out by many authorities. Stekel claims that the root of most cases is an ungratified sexual instinct. One author speaks of it as a type of displacement of the libido. Key L. Barkley reports a case which he considers as an example of misdirected sublimation of the sexual urge.

William Healy regards pathological steal-

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ing, particularly in younger children, as a result of mental conflict. Characteristically, the impulse arising from conflict is guided in the specific direction of stealing at some particular time and thereafter, whenever this conflict arises again, it leads to stealing.

Max Friedemann thinks kleptomania in its purest form is an impulsive or genuinely instinctive act, the goal being not the acquisition of the stolen object but the satisfaction of a repressed urge and like the neurotic symptom it is symbolic in character. In line with this idea Keinholz uses, instead of kleptomania, the term "symbolic theft."

Not all writers concede that the kleptomaniac impulse is truly irresistible. M. Antheaume, basing his opinion upon his observations in Paris, declares there is no such thing as kleptomania. He believes that all so-called kleptomaniacs are criminals or delinquents and should be punished. He cites the scarcity of kleptomaniacs in London and Buenos Aires where harsh measures are used, as contrasted with the large numbers in Paris where gentler treatment is accorded them. H. Bouquet disagrees with Antheaume and holds that a certain number of such persons are really sick. He thinks almost every person has a desire to commit a theft at times, but the majority remain honest. A distinction should be made between those who cannot and those who will not resist.

Another writer says that when we speak of "irresistible impulse" we must bear in mind that much of our crime is somewhat impulsive, that is, lacking much premeditation, and is purposeless at least to the extent that the perpetrator receives no lasting benefit from his act. Whether the impulse is irresistible or unresisted is usually a matter of degree.

Quackenbos, however, maintains that a thief steals deliberately, with malice aforethought, driven by necessity or perverted taste, with a knowledge of the value of the articles appropriated and with a definite intent to use them or dispose of them by sale. A kleptomaniac, in contrast, steals in obedience to a blind impulse over which he has no control and without considering the danger to reputation or the possibility of punishment.

Property appropriated by kleptomaniacs is often thrown or given away. He cites the case of one of his patients who entered the room of a guest at the hotel where she was staying, pocketed all the jewelry in sight and appeared at dinner the same evening ablaze with the stolen diamonds without the slightest conception of the enormity of the act. He declares the kleptomaniac is a moral invalid and therefore irresponsible. He laments the fact that in the United States moral insanity is sane enough to punish rather than unfortunate enough to treat. Kleptomania, according to this author, is in some cases distinctly hereditary. He mentions a young patient of his who was the son of a gentleman whose house was filled with trifles and ornaments purloined from his friends, and whose children by three different wives were all thieves.

Nearly all authorities agree that most kleptomaniacs are women. One places the ratio at 3 to 1.

Wittels declares that male kleptomaniacs present signs of physical and psychic femininity.

There is much evidence that kleptomania is often associated with physiological disturbances or with organic brain disorders.

Many writers have observed that pathological stealing in women occurs most commonly near the time of menstruation. Some attribute this to the general nervous tension and instability commonly present at that time. Others suspect that there is an actual physiological factor, possibly endocrine, active in such cases.

There are many reported instances of women who were subject to kleptomania only when pregnant. Kleptomania occurs in girls before establishment of menstruation and several cases occurred in women after the menopause.

One woman who had a pan-hysterectomy was known to have kleptomania several years before and after the operation.

A case is reported of a girl who had Froehlich's disease and menstruated irregularly. Stealing occurred only at times when she should have menstruated and did not. Treatment with pituitary and ovarian therapy re-

sulted in regularity of menstruation and ideal conduct.

Wimmer reports the case of a young woman who would become depressed and restless and would then have an irresistible desire to steal. She would take money which she always spent for sweets. She complained that the attacks were always associated with peculiar fits of hunger. She was cured by treatment with large doses of bromides.

Another young woman would vomit if she resisted the desire to steal. Whenever she stole she had a sensation of vertigo, would become weak and frightened and could not sleep. It is frequently mentioned by kleptomaniacs that at the moment of theft they are dazed and not fully conscious of what they are doing.

Quackenbos tells of a young woman, a church member of unblemished character, who sustained a severe brain injury when a heavy window fell on the back of her head. After the accident she developed symptoms of severe neurasthenia and for a long time had a daily recurrence of an irresistible impulse to steal.

It is evident from this study of the literature of kleptomania that the symptom of pathological stealing occurs in association with a wide variety of physiological, psychiatric and neurological conditions. Whether the symptoms may be designated kleptomania in all cases depends upon the concept of the individual as to the meaning of the term.

The author's case is a girl, fourteen years of age, who had been arrested and charged with larceny. She was in the 7th grade in public school and was below the average level of intelligence. There are indications of a psychoneurotic tendency; she bites her nails and exhibits nervous mannerisms. For the past two years she has been a moderate behavior problem in the home, being described as obstinate, irresponsible, undependable and untruthful. She reacted unsatisfactorily to efforts of the parents to discipline her, exhibiting temper tantrums and screaming spells. Until the stealing began she was not a behavior problem in school but was seclusive and introverted. She had a long record of perfect attendance. School achievement

tests yielded remarkably high results in view of her mediocre general intelligence. There was a previous isolated instance of stealing several years ago. The mother had been known to steal on at least two occasions. One brother was involved in theft once recently.

Before the patient was arrested she had been suspected for some time. After her arrest she was found to have in her possession a number of purses, articles of jewelry, photographs, a bank book and several hats, all stolen from her schoolmates. Most of the stolen articles were found in her home.

When questioned, the girl declared she did not know why she had stolen. She had no need for the stolen things since her parents provided for her adequately. After stealing she had no further interest in the thing stolen. She seemed genuinely puzzled by her own conduct. She was remorseful and was extremely fearful that she would be committed to the Industrial School concerning which she had some wildly distorted ideas.

The girl was allowed to return to school. One week later she was arrested after stealing another purse. She said she had seen the purse in a school locker and had been seized by an irresistible urge to take it. She had made no attempt to conceal the theft, had spent the stolen money for ice cream for her friends and herself and had carelessly discarded the empty purse where it could be recovered and identified. She had evidently been entirely unconcerned over the possible consequences of her act. After her arrest she was overwhelmed with remorse and kept repeating "I don't know why I did it."

In the course of the first interview it had been learned that for several months the girl had suffered from transient attacks of dizziness occurring at irregular intervals. Following an attack she was slightly confused for a short time. These attacks had been unusually frequent during the time the stealing had occurred. The girl did not suspect any association between the two. The author suspected that the dizzy spells might be petit mal epileptic manifestations and on that theory decided to prescribe an anti-convulsant drug. The medication used was dilantin sodium in 1½ grain doses, once daily before breakfast.

At the time treatment was started attacks of dizziness were occurring several times daily. These attacks ceased immediately and during a period of six months have not recurred. The girl returned to school, her conduct has been entirely satisfactory and she has felt no further urge to steal.

The author recognizes that in this case various points are open to question. The fact of epilepsy was not definitely established, as might have been done by means of electroencephalography; the apparatus necessary for this procedure was unfortunately not available. The possibility that the stealing and the dizziness were psychoneurotic symptoms and that the relief may have been due to suggestion rather than specific therapy has been kept in mind.

Whatever theoretical doubts may arise as to the basis of the kleptomanic behavior and the mechanism of the treatment, the practical results are highly gratifying.

OBSERVATIONS CONCERNING ELECTRO-SHOCK THERAPY

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Following the use of insulin and metrazol in the treatment of psychiatric disorders, a shock produced by electric current was first applied in 1938 in Italy and soon afterwards it was introduced in this country. Electroshock therapy has been the regular form of treatment in the Delaware State Hospital since September, 1940. This article deals with observations made on patients who had been treated at the Observation Clinic of the Delaware State Hospital.

We have used the Offner machine. This instrument has a switch for the preselection of time which ranges from one-tenth to one-half second, a check for mille amperes with dosage from two hundred fifty to five hundred. Voltage is not controlled in the machine, it depends upon the local plant. At our plant it is between one hundred fifteen and one hundred twenty. Current is applied through two electrodes which in turn are applied on the anterior temporal region on each side. Current applied is passed through the

prefrontal area of the brain. Electrode jelly is applied locally to the skin and also to the electrodes. With the aid of a rheostat the current is tested and brought to the desired strength, then the test button is released and the treatment switch applied. The reaction follows without any further operation of the machine. The patient lies on a wooden table and the persons standing by the patient can hold his body only with one hand. This is a precaution to prevent any possibility of the current running direct through the aides' heart.

Generally it is the aim of the treatment to produce a major convulsion, unless for some particular reason a sub-convulsive treatment should be desired. The action may be prompt or delayed a few seconds, starting with a tonic phase of from 3 to 6 seconds and continuing with a clonic phase of from 25 to 45 seconds. The convulsion produced is the same as one may see in an idiopathic epilepsy. At the end of the convulsion the head or the whole body is turned on the side in order to drain excessive saliva and thus prevent patient from aspirating any. A little while following the convulsion stage there is an aftermath of so-called automatic behavior during which patient is rather restless and may be even somewhat violent. After fifteen or twenty minutes they regain consciousness and in about one-half hour can be returned to the ward.

With regard to the dosage, it may be said that the initial dose is somewhat arbitrary, the general principle being to start a treatment with as low a dosage as possible. It is increased when necessary during the future course of the treatment but frequently it is possible to obtain a major convulsion with the same dosage several times in succession. One may increase the dosage by increasing the time, the mille amperes, or both.

Since the Offner machine has been modified, the test current is not felt any more by the patient. During the treatment he becomes immediately unconscious and remains so for sometime afterwards so that he does not have any recollections of it. This is a definite advantage from the standpoint of the patient.

Two treatments are given weekly, the num-

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ber and frequency being determined on the basis of observation and progress. Complications in the form of fractures resulting from the treatments, are comparatively rare. Most common are compression fractures of one or more bodies of the vertebrae. After these fractures are healed, treatment is resumed without any further ill effects.

Electro-shock treatments are not considered a panacea in the treatment of psychiatric disorders but as a therapeutic aid. They are weighed carefully in each individual patient in regards to indication and contra-indication and the extent of improvement that may be anticipated. Generally speaking, the best results may be looked for in acute disturbances, whereas in those of a chronic nature or where there is more severe disorganization, the benefit obtainable is limited and perhaps only temporary.

As a general rule after the patient is admitted to the hospital, conservative therapy is instituted for a reasonable length of time. If the desired improvement does not take place, electro-shock therapy will be started after permission for this treatment has been obtained from the nearest relative, just as it would have to be obtained in case of a major surgical operation.

To illustrate various types of responses the abstracts from three case histories of patients who had received electro-shock therapy are briefly outlined here.

1—A white, married man, forty-one years of age, suffering from manic depressive psychosis, manic type, was admitted during the latter part of December, 1941. In the middle of January he was given two electro-shock treatments resulting in major convulsions. Response was very prompt and favorable so that further electro-shock treatment was dispensed with and direct and indirect psychotherapy, recreational and occupational, were continued. Patient was discharged three weeks later. This is an instance where conservative treatment at first instituted did not appear to bring out the desired result. Administration of electro-shock treatments brought about rather marked, favorable change which was sustained.

2—A white, married woman, twenty-five

years of age, diagnosis, manic depressive psychosis, depressed type. She was admitted in the beginning of January of this year and during the first four weeks of her stay, not only did she make no favorable progress, but her condition actually became worse with suicidal inclinations, delusions and hallucinations and hopelessness in regard to the future, misidentification of persons, even members of her own family. Electro-shock treatments were started in the end of January and two treatments were given regularly every week until she had received altogether eleven treatments, of which nine resulted in major convulsions. After the institution of electro-shock therapy, for a while not only was no improvement noticeable, but patient seemed to undergo a more severe degree of disorganization for a while. A definite improvement was observed four weeks after the start of the treatment, the improvement was sustained and progressive. Not only did the depressive mood and feeling of hopelessness, delusions and hallucinations disappear, but the patient's attitude towards life underwent a favorable change, there was a marked gain in weight, she actively participated in all activities and was discharged six weeks later.

3—This is an instance where several trials with electro-shock therapy produced only temporary results so that the treatment eventually had to be discarded. A white girl, single, twenty-four years of age, high school graduate, doing clerical work, was admitted on April 1, 1941. Upon admission and for some time following she appeared quite apprehensive, was inclined to be restless, even throwing herself out of bed, required neutral pack, sedative, had to be fed by a nurse. At times burst out in tears for no apparent reason; she also became noisy, assaultive, in an impulsive fashion. She appeared to block at times, was hallucinated, delusional, at times definitely confused. There appeared to be no noticeable change in her condition during conservative treatment. Diagnosis: dementia praecox. After two months duration electro-shock therapy was started at the beginning of June, 1941, and was continued until the end of July, during which time she had fourteen treatments with fourteen major convul-

sions, alternating during this time with pack treatments. The electro-shock treatment was discontinued because patient complained of precordial discomfort, headache and there was marked elevation of blood pressure. By that time patient was less disturbed but hallucinations continued.

The second series were started by the middle of August, 1941, and continued until the third of December, by which time she had received thirty-seven electro-shock treatments with thirty-seven major convulsions. This course was given in an interrupted fashion. By the end of October she became alert, spontaneous, sociable, participating in occupational and recreational therapy, cooperating well without aid of treatment and was permitted to go for rides with her family. However, during the early part of November there was evidence that she was unable to sustain the improvement, she again lost the initiative, was inclined to giggle, became loud in her behaviour and emotionally unstable. It was of further interest to observe that during the long course of electro-shock therapy, patient would respond favorably immediately following a treatment. Because of the comparatively large number of treatments given, they were stopped for a while.

The beginning of February, 1942, she still appeared agitated, showed poor judgment, was silly and did not respond to questions at all. From then on until the beginning of April, she received intermittent electro-shock treatments, the idea being to take advantage of the momentary improvement and try to prolong its favorable effect. In the long run, this did not work out, so that even though forty-two treatments had been given in the course of ten months, this patient is essentially unimproved.

The periodic improvements obtained from electro-shock therapy were never sufficient to allow satisfactory rapport with the patient, so that active psycho-therapy could have been continued. It appears obvious that this is the chief reason why the treatment that had been found successful in many other instances, has failed here.

CONCLUSIONS

1. Electro-shock therapy has been found a valuable agent in the treatment of psychiatric disorders.

2. Best results are obtained in acute conditions of affective groups, where it is possible to obtain adequate rapport with the patient and after that continue with active psychotherapy supported by occupational and recreational activities.

3. A limited, temporary improvement may be obtained in the dementia praecox group. However, in these conditions the disorganization of the personality usually is so severe that even electro-shock therapy can be at best only of a limited scope, namely, the control of disturbed behaviour.

4. Electro-shock therapy is resorted to only after conservative treatment is applied for a reasonable time and has failed to produce the desired results. Actual danger to patients in form of complications is comparatively rare and of no serious consequence. For this reason every patient should be given the benefit of the doubt when it appears that he should be benefited by the treatment. So far in more than one and a half years' treatment, not a single fatality has occurred.

CONSIDERATIONS OF HUNTINGTON'S CHOREA IN DELAWARE

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During the past seven months five cases of Huntington's chorea have been referred to Mental Hygiene Clinic for examination from various parts of the state. One of these patients proved to be a previous hospital patient, but even four new cases in so brief a period seems a large number from a territory the size and population of Delaware. Certain observations on these cases suggested a review of this subject.

Two of the patients had sustained injuries soon after the appearance of symptoms which relatives considered to be the cause of the choreic movements. One patient recognized the fact that his injury occurred because of his awkwardness. In the other case the father had furnished us with data regarding pa-

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tient's symptoms one year before the supposed causative accident. Another factor of interest both in the cases examined during this interval and the records of patients suffering from this disease previously admitted to the hospital was the large percentage of cases in which the psychiatric problem rather than the neurological picture led the patient or the family to seek medical attention. This contrasts with the belief that mental disturbances other than the depressive phase (which usually antedates the tremor) appear relatively late in the disease.

The condition was first reported in 1841 by a young physician who wrote of the disease known colloquially as "magrams" occurring in certain families in New York and recognized by the public as a familial degenerative disease. In 1863 Dr. Irving Whitall Lyon, house physician at Bellevue Hospital, mentioned the condition and suggested that the term "migrims" might be derived from migraine but that the two conditions were not associated disorders. The most satisfactory description was given by Dr. George Huntington in a paper read before an Ohio Medical Society April 13, 1872. Members of his family had practiced medicine on eastern Long Island for three generations and had observed the symptoms in numerous members of certain families in that vicinity. In this region the disease was known as "that disorder," "mad staggers," or "the fidgets." Though the first cases were originally traced to Bures, Suffolk, England, through early Connecticut immigrants it has recently been demonstrated by Falstein and Stone at Elgin State Hospital that most of the cases in Illinois are recent European immigrants but with history of familial chorea in some cases for five generations. In Massachusetts some instances of this disease have been demonstrated in Polish immigrants, but none of the cases included in this report are of recent European extraction.

According to Snyder "Medical Genetics" the inheritance of this disorder is dependent upon an autosomal dominant factor, "with very high penetrance and good expressivity." Thus far no constant changes in blood, spinal fluid or urine examinations have been noted.

Reports of encephalograms by Goodhart, Balser and Biever demonstrate ventricular dilatation and cortical atrophy. Other investigators have shown that the degenerative processes are essentially those in the neostriatum, (putamen and caudate nucleus). Unfortunately we have no reports of microscopic examinations on the autopsied cases in this series.

Huntington's chorea or chronic hereditary chorea is a most characteristic disease. Symptoms usually begin in the fourth and fifth decades in members of families known to suffer from this condition. Grimacing and abnormal movements of the arms or body are noticed. These become more pronounced. Though the patient is often able to care for himself for a long time, every function is accompanied by convulsive movements of the entire body and are accentuated by mental excitement or voluntary effort. Despite this great exertion it is unusual for patients to complain of fatigue. Muscle tonus may be diminished but there is no sensory disturbance. Tendon reflexes are usually active, at times even exaggerated.

Mental deterioration is characteristic and in addition the patient is often depressed or excited. It has been stated that the percentage of suicides in families affected with this disease is high. One must consider that the fear of the appearance of this disease may produce depression and suicidal consideration in the offspring of afflicted cases. However, it does appear that emotional instability and such manifestations as alcoholism occur more frequently in these families than in other groups. In our cases certain patients showed a marked tendency to paranoid rather than depressive reactions.

The following case reports indicate some of our findings.

CASE 1.

D. P. Female. Case No. 766. Age 44. Observation Clinic, Aug. 8, 1941 to Sept. 24, 1941; November 18, 1941 to date.

History: Familial history has been denied by the family. D. P.'s mother died at age of 57 of a "stroke of apoplexy." Her father is living and apparently well at the age of 77. There are three remaining siblings who are all well. One sister died of cancer of the spine.

D. P. had three years in a girls' finishing school, later she had commercial instruction. She was employed for seventeen years in the State Board of Health in the District of Columbia. She was described as socially inclined, liked music and concerts. She was pleasant toward friends but quarrelsome and very critical of her family. She maintained church affiliation and was abreast of current events.

D. P. was very nervous after the death of her sister with whom she lived. She took a leave of absence from her work without effect, cried a great deal, was easily upset and agitated, lost interest in her environment and had a poor appetite. She consulted physicians but showed few symptoms, slept well without sedatives and had no twitching. On returning to work she was lonely and tired. Involuntary movements were first noticed one and one-half years later. Apparently patient was unaware of the extent of the movements as she referred to it as twitching of shoulders though choreic movements involved the extremities as well. She admitted irritability and frequent crying spells but her attitude was hopeful of cure and she did not appear depressed.

Physical Examination: Vision was considerably impaired and not entirely corrected with lenses. There were extra ocular movements and facial unrest, choreic in type. No definite tremors. Involuntary movements of the neck musculature and of the extremities, involving the proximal as well as the distal parts. Spastic finger signs, slightly developed, abdominal reflexes doubtful. Plantar reflexes feeble and equal. No pyramidal signs of the lower extremities. All other deep reflexes active and equal. All laboratory work including blood and spinal Wassermann was negative.

Mental Examination: She came voluntarily to the hospital but was easily upset when unable to have her own way. She was silly and immature in her reactions. Affect was inappropriate to the seriousness of the situation. Reactions to current events were very superficial. There was no disturbance of the sensorium at that time. Psychological showed an individual of bright average native men-

tal ability with present level of effective function at dull normal.

Progress: Upon admission patient was very cooperative but soon became ill-tempered. She would refuse to cooperate with certain types of treatment, later complaining that this same therapy had not been given. Throughout her hospitalization she has failed to appreciate the severity of her disease. She became ambivalent in accepting her hospitalization, would request her discharge, then later would decide to remain. As she came to partially appreciate the seriousness of her condition, she showed further depressive symptoms. At this time she occasionally fell, injuring herself and in addition to the uncertainty of movements it was necessary to consider the question of unconscious suicidal motives. Patient became more careless of personal appearance to the point of urinary incontinence. There was slight improvement after hydrotherapy. Patient was less restless, slept better and gained a little in weight. She left the hospital against advice, September 22, 1941, but returned voluntarily two months later because she believed that she needed further treatment. She adjusted fairly well for a time but in January friends reported that she was writing very paranoid letters regarding the hospital, her father and persons with whom she worked in Washington, even threatening homicide. In addition she visited in their homes, when absent from the hospital, and annoyed their relatives. At about this same time hospital adjustment became less satisfactory.

At the present time she is at home for a short visit with her family but is essentially unchanged mentally and physically.

CASE 2.

F. P. Male. Mental Hygiene Clinic, No. 7650.
Age 52 Years. Duration 4 Years.

Family History: A sister has a similar illness and, at the time of patient's examination, was being cared for in a hospital in another state.

Personal History: F. P. was born in Cambridge, Massachusetts and is a painter by trade. He is married and has had nine children. According to his statements he was well until four years before admission when he

suffered an acute attack of rheumatism and was cared for in a general hospital. He claims that the choreiform movements first appeared at that time. He denied the statements made by the family and interested agencies, that he was irritable and fault-finding with the family. The informants stated that he frequently wandered away from home and on two occasions had been returned by Travelers' Aid from Camden, New Jersey, and Baltimore, Maryland. For more than one year patient had refused to come to the clinic for examination, but finally consented to a physical examination to determine whether he was able to work.

At the time of examination patient appeared prematurely old with marked postural assymmetry and choreic movements which he was able to control to some extent by folding his arms across his chest and similar techniques. The right shoulder was higher than the left and there was both kyphosis and scoliosis of the thoracic spine. There were scars on his upper lip from recent injury. (He claimed to have been beaten by thugs.) There was marked tremor of the tongue. All the deep reflexes were hyperactive, especially the left patellar. Patient walked with a wide base and he was unsteady in the Romberg position. Speech was thick and tended to be explosive in character. Mentally he was superficially cooperative but evasive or frankly untruthful about his history and the present symptoms. He was excessively complimentary in his remarks about social agencies in contrast to his irritable attitudes toward them.

He was re-examined December 3, 1941. At that time neurological examination revealed "moderate mimic rigidity. Weak associated facial movements on voluntary innervation. Irregular movements of the tongue when protruded. Unequal palato-pharyngeal arches but normally elevated on phonation. Mayer feeble on the left side." The previous findings were confirmed.

Recent attempts to contact the family directly have been unsuccessful but a social worker for an interested agency furnished the information that the patient continues to be quite a troublesome problem in the home.

CASE 3

H. W. Case No. 6696. August 18, 1936.

Duration 6 years.

Family History: Maternal grandfather died in a county almshouse. A maternal uncle was mentally ill but lived to be an old man. The mother had chorea and her mind was somewhat affected before her death at the age of 36 years. She was never hospitalized and her death was due to intercurrent disease. One sister died at D.S.H. Her diagnosis was psychosis with Huntington's chorea. Another sister is said to have intermittent attacks of nervousness for which she voluntarily seeks help but she is reported as restless, excitable with "thick speech" and difficulty in pronouncing her words. She has made at least two suicidal attempts. One brother is irresponsible and his exact whereabouts are unknown to the family. Two children are said to be very nervous.

Personal History: H. W. was born in St. Georges, Delaware; finished Junior High School, and learned the trade of barber. Informants vary as to personality but he has court records for drunkenness, lewdness and breach of peace during the period 1930 to 1936. He was irritable, nervous, and excitable, at times was shaky and his head would move jerkily. His speech became increasingly profane and obscene. He lost interest in his family, did foolish things such as smashing light bulbs to annoy his wife. He constantly accused his wife of infidelity and told exaggerated stories. Patient drank increasing amounts of cheap liquor and after drinking developed a ravenous appetite. Despite the intake of large amounts of food he lost considerable weight. He was committed by the police during one of his drinking bouts.

Physical examination: On admission patient had a small abscess on the right elbow, and evidence of early arteriosclerosis. Neurologically, "convergent eye movements were somewhat limited. There were short involuntary jerking movements visible now and then in the patient's face, choreiform in character. Plantar reflexes were positive and equal, at times combined with flight reactions. Muscular strength was somewhat feeble on both sides. Gait was peculiar, showing sometimes

excessive and at other periods sudden retarded movements of the legs. Associated movements of upper extremities were more pronounced on the right than the left. Slight swaying of the body and involuntary movements of the toes occurred now and then and were choreiform in character. When patient kept his arms elevated to shoulder height, the outspread fingers likewise performed sudden short involuntary movements. Ankle to heel trial was performed with slight staccato movements on both sides." Laboratory examination including blood and spinal fluid Wassermann was negative.

Mental examination: He was cooperative and sociable, though mildly resentful of hospitalization, and critical of his wife, tending to minimize his alcoholism. His judgment was poor and reasoning only fair.

Psychological: The test results indicate that the patient is of average adult intelligence and that there is at the present time a considerable loss in efficiency due to mental dysfunction.

Progress: During stay here patient was cooperative and helpful, but when permitted to leave the hospital for weekends became troublesome at home. He improved sufficiently to be able to relieve the hospital barber of some of the hair cutting but said he had been unable to shave anyone for a long time. He was found to be untrustworthy, disregarded parole rules, left the hospital grounds without permission, stole money from his wife when home for weekends and was frequently untruthful.

He was paroled to the care of his father and sister in July, 1937, with the stipulation that he remain away from his wife. He continued to do well for about six months, then became depressed because of lack of employment. Later he did not help about the house, refusing to care for the furnace or to do other work of the sort because it would roughen his hands and interfere with his occupation. During this interval patient appeared to have fewer choreiform movements. Ultimately patient found work as a paper hanger and painter, working with his father but was finally obliged to discontinue this employment because the choreic movements jeopardized his safety.

In December, 1941, patient's sister who has always maintained a most indulgent attitude toward patient requested another examination and he was seen at the Mental Hygiene Clinic, December 18, 1941. At this time he showed some choreiform movements especially of his face and upper torso. All of his movements became very much worse on voluntary effort. It was almost impossible for him to keep his dentures in place when he attempted to speak because of the involuntary movements of his facial muscles. Tendon reflexes were exaggerated but symmetrical. He insisted that his disease had not progressed since he left the hospital but admitted that he had been unable to work at his trade for more than three years.

Mentally patient was tense and definitely evasive when questioned about his separation from his wife. Later he admitted his belief in her infidelity. He insisted that he had been an abstainer since leaving the hospital. Memory was fair, judgment poor and there was evidence that he became quite irritable when crossed. Because patient was unable to care for himself and the relatives felt unable to bear this burden, it was suggested that he be admitted to the Delaware State Welfare Home at Smyrna. This suggestion was rejected by the patient and he returned to his former trade. According to his niece, April 28, 1942, he has bought a shop of his own and seems to be doing fairly well. He is taking sedatives regularly. However the clinic social worker reports that his movements are very severe and that the patient seems to have little business.

CASE 4 (Sibling of previously mentioned case H. W.)

M. L. Case No. 4418. Age 35 years. Admitted January 17, 1927; died Sept. 15, 1934. Duration of attack before admission, one year. M. L. was the sister of H. W.

Patient was described as very disturbed and violent at times, threatened homicide and even tortured sister's children by bending back their fingers. Previously she had suffered from depression with disorders of memory and incoherence. Neurological evidence of Huntington's chorea was recorded on admission. She improved and was paroled against

the advice of those in charge, but returned to the hospital within two months. During her second hospital residence she had a tonsillectomy, laparotomy for cystic ovary and repair of post-operative hernia. Four years after admission the patient was reported as noisy and resistive, at times fighting other patients and showing marked tremor. She was well oriented but partially incoherent, lacked insight but had no delusions or hallucinations.

Three years later patient's physical condition grew rapidly worse and she died after approximately one month's illness. Autopsy demonstrated pulmonary tuberculosis and "atrophy of the brain."

CASE 5

W. S. Male. Case No. 8284. Admitted April 10, 1942. Age: 45 years. Duration of attack before admission, 2 years.

Family History: W. S.'s mother died in 1911 from "paralysis" but the family stated that her symptoms were the same as those of the patient. The disease first appeared while she was pregnant with patient. Two maternal aunts had similar "nervous trouble." The family was extremely reluctant to give information but informants stated that all the family are nervous. One sibling is alcoholic and another died at the age of 33 years before the onset of this disease would be expected. (As the wife has attempted to obtain compensation for an accident occurring after the onset of the present symptoms, the hesitancy to furnish more accurate data can be understood.)

Personal History: W. S. was trained as a draughtsman, but for 10 years during the depression he had no employment. He returned to his position two years before his hospitalization but symptoms of his disease prevented adequate achievement. Prior to the present illness patient was described as friendly, participating in church, fraternal and social activities, took a keen interest in home life and was affectionate with his family.

From 1930 to 1940, patient was unemployed. He worried excessively because he could not obtain employment and that his savings dwindled until the family was forced to accept relief. He was restless, wrung his hands, wandered about the house and was unable to

concentrate, but showed no neurological symptoms according to his wife. He returned to work in 1940 and though the type of work was unfamiliar he showed satisfactory achievement for a few months. After two or three months he commenced to stagger, especially when fatigued. This became worse, he swayed from side to side in walking and people often thought he was drunk because of his gait. In October, 1940, patient was struck by a bus and received a head injury, diagnosed at Cooper Hospital, Camden, New Jersey, as concussion of the brain. He admits that the accident occurred because he could not protect himself, due to his unsteady gait. After this accident, symptoms appeared to progress more rapidly. He was less affectionate with his family, was careless about the house, but continued meticulous about his personal appearance. He showed marked depression, was dissatisfied with his work and on two occasions left home for a period of days without informing the family. He threatened suicide but made no known attempts. During the six months prior to admission patient became unable to grasp objects, spilled his food and would cut himself with a razor in shaving.

He was seen by the Mental Hygiene Clinic, January 7, 1942. At that time he was able to give a far more accurate account of his illness than the informants. He was indecisive about coming to the clinic but upon arrival, entirely cooperative with the personnel. Though never unreasonable, he was inclined to be euphoric in anticipating recovery. Memory was fairly good. He was evasive about the unannounced trips he had taken and impairment of judgment was indicated by his failure to appreciate the justifiable anxiety of his family. It was obvious that he was preoccupied with the considerations relative to his own condition. Psychological examination demonstrated that patient was of average intelligence but with a moderate degree of dysfunctioning evidenced by poor memory control and slowness of thinking processes.

Physical Examination: Revealed an emaciated white male with gait and movements characteristic of Huntington's chorea. Oral

hygiene was poor. Marked tremor of the tongue without deviation. There were typical incoordinated movements of the extremities, especially of the shoulders and arms, though in walking gait was so poorly coordinated that the patient showed a tendency to fall against objects. There were irregular movements of the face especially on the left side and marked interference with speech. Pupils were widely dilated but reacted promptly to light. All deep tendon reflexes were exaggerated. Heart sounds were poor. Blood pressure 120/60. Respiratory difficulty of four years' duration had been previously diagnosed as asthma.

The wife was reluctant to consider hospitalization but this became necessary April 10, 1942. He has been cared for in bed because x-ray examination confirmed the diagnosis of pulmonary tuberculosis. On admission he was cooperative but soon became dissatisfied and restless, and this increased the severity of his symptoms. Sedatives have been required. There have been gross errors in judgment. Blood Wassermann and spinal fluid examinations were negative. He is easily discouraged and has definitely depressed phases and complains that he is unable to control his thoughts. There have been no suicidal attempts since admission. He is emotional and disturbed by loneliness and the inability to see his sons. He complains of compulsive thoughts and remarks that before he came he did not see much to do but now he continually plans for the future, how he will do this or that for himself or his family. Patient realizes that many of his schemes are "far-fetched." Chorea movements have been definitely diminished since he was in bed; but he shows marked motor restlessness during the day and complains of difficulty in falling asleep at night.

CASE 6

J. K. Male. Age 34. Mental Hygiene Clinic, March 7, 1942. Duration of attack before hospitalization, at least 6 years.

J. K. was transferred from the State Welfare Home at Smyrna because, due to choreic movements and poor judgment he had unintentionally set fire to bed linen and clothing.

Family History: J. K.'s maternal grand-

father died in his 50's of chorea after an illness of 3 years. One maternal aunt died of chorea, another is said to have died at the D. S. H. but no record was found. His mother died in the Philadelphia General Hospital of chorea after an illness of 3 years. The oldest brother is believed to have the disease, having been pensioned as disabled and is now cared for in a nursing home because he is unable to look after himself. The next older sister died at the D. S. H. of pneumonia complicating Huntington's chorea. The three surviving siblings are under 35 years of age, therefore, the absence of symptoms of the disease in these cases at the present time is inconclusive.

Patient was 34 years of age when first seen by the Mental Hygiene Department in 1942, but had shown evidence of the disease five years earlier, according to the statements of the father when the sister L. K. was admitted to the hospital in 1936. The father died in the interval, and we are dependent upon the wife's grandmother for the present history of this case. Patient finished the 8th grade and learned the trade of plumbing. He is described as a very quiet person, friendly, sociable, fond of dancing, but disinclined to discuss personal difficulties with anyone else. He was very neat in personal appearance prior to the onset of symptoms.

He was industrious and reluctant to accept relief despite his disability. Patient was married at the age of 22 and has two children. His wife left him five years ago (after the onset of symptoms). In June, 1937, the patient was admitted to a general hospital for treatment of injuries received when he was struck by an automobile. Fracture of the left lower leg failed to heal satisfactorily and two months later open reduction and insertion of a "six screw plate" was necessary and union was very slow. The informant placed the onset of symptoms as six months before his admission to the State Welfare Home. However, the result of an examination by a neurologist in Wilmington shortly after the accident indicated that deterioration was apparent then. The patient has been irritable, depressed and has worried about his condition and lack of employment. During the last few

months he became a problem because of his carelessness with matches and cigarettes. Even after he had set fire to clothing and bed linens he continued to insist upon having matches in his own possession and it was necessary for someone to remain with him constantly. The family relates the onset of symptoms to the accident.

Physical examination: Revealed the characteristic gait, grimacing and mimetic movements of the extremities and torso. These were partially controlled by patient by characteristic postures, such as holding the flexed arms rigid against the trunk, bracing the legs against a chair, etc. However, as soon as the rigidity was relaxed the involuntary movements recommenced with increased severity. A coarse tremor of the tongue was apparent even without protrusion. Infrequent and incomplete blinking of the eyelids was also present. Patient swayed in Romberg position. The lower tendon reflexes were accentuated on the left side and plantar reflexes were positive on the left. In addition patient showed exophthalmos, oral hygiene was poor and there was a surgical scar of the left lower leg. All of the laboratory findings, including blood and spinal fluid Wassermann examinations were negative.

On admission to D. S. H. patient was placed on sedative but this was insufficient to prevent him from falling out of bed and restraint was necessary at night to prevent injury. During the day he was ambulatory and conversed with the other patients, playing cards and checkers. He was invariably beaten because of lack of concentration. He was definitely less irritable than upon admission, accepted the diagnosis but lacked insight as indicated by the belief that he could work at his trade if given the opportunity.

Present Condition: Patient is being cared for on male convalescent ward and is working on the lawn. Movements continue unabated and he requires frequent rest periods. He is receiving hyoscine gr. 1/100 b.i.d., and sleeps well at night but complains of somnolence during the day. He has gained in weight. Mentally he continues to be unduly optimistic about himself and makes such statements as, "I never felt better in my life—I'm fine,

absolutely fine." He is careless in personal appearance and requires supervision about dressing.

CASE 7

(Sibling of previously mentioned J. K.)

L. K. Female. Case No. 6792. Admitted Jan. 2, 1937. Age 32. Duration before hospitalization 5 years.

Family History: Was furnished by the patient's father who stated that patient's mother was one of six siblings of whom three suffered from the same disease and of the fifteen offspring, at least five have shown similar symptoms.

Patient attended grammar school and studied dressmaking at night school. She was single and kept house for the family after her mother's death. The symptoms first appeared five years before admission but became much worse 4 years later. She commenced stumbling and sometimes fell, was unable to help about the house, and was described as headstrong with poor memory.

L. K., sister of J. K., was first referred to M. H. C., January 2, 1937. Physical examination showed an emaciated white female with a lesion of the upper lip due to recent injury. Oral hygiene poor. Pupils reacted sluggishly. Movements of facial musculature interfered with by choreiform movements. Entire mouth pulled to the right and tongue protruded to the right. Upper extremities were somewhat rigid with exaggerated tendon reflexes. Power diminished in both hands but especially in the right. Lower tendon reflexes exaggerated. Gait was unsteady. "She steps very high and her limbs sway outward as she walks." Blood and spinal fluid examinations were entirely negative.

Mental Examination: Patient was cheerful, correctly oriented without disturbance of the sensorium. Attention and retention were interfered with but the degree of intellectual deterioration could not be determined. Psychologist classified patient as possessing average intelligence but noted that there was marked scattering and a severe degree of dysfunctioning.

She was admitted to this hospital the same day. During her hospitalization it was necessary to care for her in bed because of the

severity of her symptoms. She was friendly, quiet, did not care for occupation but enjoyed the radio and seemed to grasp what she heard. She lacked spontaneity but answered questions well. Memory for dates was poor. Ten days after admission patient suddenly became noisy, threw any object within reach and was unable to carry on "sensible conversation." Later she said she was afraid but was unable to tell what she feared. Though the chorea did not improve, she became cheerful and sociable for a period of several months; read a great deal, but in May, 1938, commenced to fail physically. Despite intensive symptomatic therapy her condition grew steadily worse. On February 23, 1939, patient contracted pneumonia and expired March 3, 1939.

Autopsy diagnosis — Huntington's chorea, lobar pneumonia, bilateral, dilatation of the right heart, right fibrinous pleurisy, calcified mesenteric nodes, congenital anomaly, patent fossa ovale. The brain weighed 1200 grams. The skull was somewhat thicker than normal. The convolutions were slightly gaping and the cortex showed a number of intermeningeal hemorrhagic injections. The multiple coronal sections showed moderately intense peripheral congestion. The left ventricle was larger than the right. Basal ganglia showed whitish cloudy areas on both sides.

In conclusion the writer has been impressed with the number of cases of Huntington's chorea seen in the Mental Hygiene Clinic during the past few months. The danger of highway accidents to these patients because of incoordinated movements is demonstrated by the history of two patients. The prominence of the psychic manifestations in a disease characterized by gross neurological manifestations appears in each of these cases which were brought to the attention of physicians because of the psychiatric problem rather than the physical phenomena. No successful treatment for this condition has been advanced to date. The severity of the disease warrants further investigation in the field of therapy.

THE FRONTAL LOBES, THE PREFRONTAL LOBOTOMY AND THE PSYCHOSES

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Surgical treatment of certain mental diseases is slowly and steadily proving to be of value. Moniz first pointed out that section of the frontal association fibers would improve mental symptoms in carefully selected cases. Fulton and Jacobson established the physiologic basis in well-controlled experiments on apes. Moniz's claim for the effectiveness of surgical intervention has been confirmed by report of Freeman and Watts, by Lyerly, and Grant.

It should be pointed out that the operation is a mutilating procedure; that it is potentially dangerous. Its effectiveness cannot be denied. The association tracts once severed can not be restored. Therefore, the operation should not be adopted as a standard procedure but should only be resorted to when all other methods, both conservative and more drastic (shock therapy), have first been tried. Under certain circumstances, also, the patient's physical condition will not stand shock therapy but will safely go through the operation. It seems permissible in the light of our tragic experience with people's mental sufferings, to make such a decision.

For the technique of the operation the reader is referred to very competent works on the subject, by Grant, Lyerly, Freeman and others. It is briefly as follows: from the most posterior part of the curving lateral wall of the orbit a line is drawn parallel to the zygoma. At a point on this line 3 centimeters behind the post edge of the lateral orbital ridge a perpendicular line is drawn running up from the upper edge of the zygoma. Five centimeters above the zygoma a dot is made on the skin with a dye. The same measurement is made bilaterally. The mark on each side should be as nearly symmetrical as possible so that trephines and cortical incisions are on the same level in each frontal lobe. To assure this a stab wound is made at each mark and a chisel inserted to make a mark on the bone. Local anesthesia should not be used as it distorts the

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skin. Nor infiltration with novocaine for its subsequent incision can be made. An incision, 1½ centimeters in length, is made perpendicular to the zygoma, the bone is exposed by retractors. The nick in the bone should have been placed within ½ centimeter of the coronal suture. Trephine openings are now made with a Hudson drill to an extent of 1½ centimeters and the dura opened. The arachnoid is entered and an avascular area of the cortex selected. A calibrated hollow needle is now introduced in such a way that it would emerge through the trephine opening of the opposite side if continued. At a depth of 5½ to 6 centimeters the falx is encountered or the anterior horn of the ventricle may be entered before the falx is reached. If the falx is met, then the needle is withdrawn 1½ centimeters and the depth from the surface carefully noted. A narrow, flat, blunt septal elevator is now introduced in exactly the same direction and plane and to exactly the depth of the withdrawn needle. It is swept downward, cutting that portion of the frontal lobe lying below the trephine opening and then withdrawn. The hollow needle was first introduced to determine the position of the anterior horn by the escape of fluid. If fluid escapes, it is withdrawn and inserted slightly anterior to avoid the ventricle. It is withdrawn 1½ centimeters to avoid traumatizing the anterior cerebral vessels.

The result of this operation is to separate the prerolandic cortex. The postrolandic cortex is left intact. The latter is concerned with the reception of impulses of various sorts situated all over the body and with the elaboration of those impulses into engrams. The individual is brought by the post rolandic cortex into relationship with all that has gone before. Experience and intelligence, the basis of behavior are mediated by this part of the brain. The prerolandic cortex is concerned with the future, the projection of the whole individual into the future, his planned course for himself and his ability to foresee himself in that setting. With the frontal lobes, the individual may see himself as he is becoming. The individual has lost his self-critique, is more easily satisfied and is lacking in the "social sense" after the operation.

The social sense, the ethical sense, the religious sense, the ability to plan and visualize into the future are practically in toto that which constitutes the super-ego. With prefrontal lobotomy this is completely gone, and nothing but an already patterned behavior based upon the operations of a former super-ego remain. The frontal lobe no longer experiments and plans and therefore no longer is frustrated. The basis of conflict formation is gone. The solitary possibility of conflict now could come only from too exacting a super-ego in the mind of the psychotherapist in the psychotherapy which must always follow this surgery.

Without the super-ego and without the ability to bare conflicts, no possibility for psychosis exists. Therefore, according to some schools, without the frontal lobes a psychosis cannot be created. Any dynamic psychosis with profound depression, with withdrawal from reality, with active tension states, obsessive thinking must now be relieved because the dynamic super-ego is paralyzed. Future possibilities are a frozen state, retrogression or reaction to planned psychotherapy.

We have chosen two cases which illustrate changes in symptomatology according to theory:

CASE 1

Patient was admitted to the Delaware State Hospital October 14, 1937. On admission she gave no significant childhood history, except being jolly, easily excited and an irresponsible type. Exact date of onset of her psychosis was not given but mental symptoms were actually noted about a year prior to admission. She was excitable and sometimes started quarrels. She grew careless about housework and would neglect personal appearance. She is said to have run after her husband with a knife, at the time seeming very confused. She accused him of infidelity. She would wander away on trips alone. She began writing incoherent notes to friends, would get up and walk about the house and slept very little. She conversed with imaginary persons. She spoke of writing a book and believed she belonged to a secret service and that everybody was against her. She ap-

peared drowsy, uninterested but inclined to be talkative, very euphoric and facetious. Later she became assaultive and she became somewhat destructive to furniture. She was very seclusive on the ward. In spite of efforts the patient gradually deteriorated; until a short time prior to operation such things as well defined catatonic postures were observed. She would do such things as stand on her bed and stare. She would become impulsive if she mingled with other patients and attacked them by hitting them over the head with a shoe. Her voice was masculine. She would state, "I am only playing a woman, but I am not a woman." She became more destructive. An improvement was noticed in the beginning of electro-shock treatments but this, in spite of accompanying psychotherapy, proved of little avail. She was very irrelevant and incoherent in conversation. She had queer delusions of sexual nature. She expected sexual relationship with people who entered her room. The patient seemed essentially of schizophrenic type. Most spectacular was this patient showing shortly after her operation. The greatest contrast in behavior appeared in her rational and coherent answers to direct questions. She looked straight at the examiner during her talk, whereas, prior to that she would always look out the window as though not in the least interested in conversation. She showed some interest in going home; stated she was going crazy. Somewhat later she remarked that she hated to meet people after she went home. She wondered about affairs at home; her child must be about 12 years of age now. When asked if she would like to see the child, she said, "It can come if it wants to." No hallucinations could be elicited but the patient still had the delusion about sex. She wanted to know whether she was changed and still was now a woman. Hallucinations usually disappear in these cases and it was probably too much to expect their disappearance so early following the operation. Outstandingly, perhaps, the tendency towards introversion, as previously evidenced by an aversion to conversation, tendency to look out the window and to hide were noticeably lacking. A projection outward was very definite. This last symptom

bears the closest relationship to theory. The dynamic mechanisms directed by the super-ego were no longer in operation, causing the patient to withdraw from reality. The pent-up emotions were no longer there. The patient's reaction could be described as more of the carefree type.

CASE 2

This patient was admitted to the Delaware State Hospital January 2, 1935. Her background was essentially introvertive. She did not make friends easily, seemed to shrink from making contacts outside her family circle. She would never attend social activities of any sort and church affairs unless accompanied by other members of her family, apparently for the reason that she wanted someone with her to help her out in a social way. She was shy and self-conscious. She was fond of music and played a great deal for her own amusement and pleasure. In this case she would play for an audience without any show of self-consciousness and timidity. Apparently in music she was somewhat satisfied with her achievements. She was extremely sensitive, misconstrued people's remarks. She was inclined to worry and look upon the dark side of life. She would not have children because she was not strong enough to raise them and felt that she could not do justice to the responsibility. Her psychosis began early in December, 1934. She became increasingly nervous, was taken to a physician for this. Later she began expressing the idea that people were against her and later that she was going to die. She thought someone was going to poison her to make her pregnant. She talked about funerals and black dresses. She imagined that she was dead. She saw her own funeral procession and saw herself lying in a coffin. She thought her relatives at other times were going to get rid of her. She began to wash her hands constantly, would get up several times at night to do this. She began talking irrationally and this irrational speech seemed to indicate that she was frightened and worried. She was cooperative on admission but soon refused food and it was necessary to resort to tube feeding. Much of her time she spent crying loudly but at other times she would

also laugh and sing. Speech at times was definitely overproductive, at times mute. She was still full of suspicions and fear on the ward. During the course of the patient's stay in the institution she became more anxious and fearful. She thought that she was decaying and undergoing a slow death. She thought that her condition was hopeless. She dwelt on events of the past and colored all of them with her own gloomy interpretations. At other times she stated that she was dead and her husband had been killed, that a doctor was trying to poison members of her family. She refused to eat at times and there were intervals in which she had to be tube fed. Immediately following the operation improvement was not so noticeable. The patient was still hallucinated and remained so for several months following the operation. At the present time these cannot be elicited. Where formerly she was kept on a ward for untidy patients, she now had made sufficient hospital adjustment so that she successfully remains in a quiet ward with other patients of the best type. Where formerly she was assaultive practically all the time, these spells are transient, last for only a few minutes and are over with. She has renewed an interest in her piano playing. She is becoming more spontaneous in conversation, whereas, at first following the operation she was very quiet. The depression has entirely disappeared. She no longer expresses delusions of a depressed nature. She no longer feels that she is dead and things had happened to her people.

This patient illustrates the need for psychotherapy to follow progressing according to theory. In many of these cases the hallucinations have gradually disappeared, however, most spectacular is the disappearance of the depression and mental suffering which had appeared to show no signs of abatement. The dynamic super-ego no longer exerted an influence towards the continued building of this psychosis. The ward physician has noticed this same change in the case of psychoneurosis, remembering the case operated on in 1940 by Dr. Lyerly.

This patient had numerous somatic complaints. He was very persistent on the ward,

always seeing the ward physician at every visit, monopolizing his time, telling about his symptoms and asking for relief. Finally, after thorough examination, this patient was operated and almost abruptly it was noticed that his persistence had disappeared. When asked if he still had the same complaints, he stated, "Yes, I still have them but they don't worry me anymore." Most striking effect as regards depression comes from the words of a patient who stated, "Doctor, you've cut out my worry center." But by the same maneuver the mechanism of withdrawal from reality, the mechanism of conversion of anxiety neurosis is all paralyzed by frontal lobe separation.

NEURO-PSYCHIATRIC ASPECTS OF CARCINOMATOSIS, WITH REPORTS OF TWO CASES

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In spite of notable achievements in the field of cancer research and cancer therapy, cases of fatal outcome are common and reflect a gleam of modesty on the optimistic perspectives opened up by years of relentless struggle against one of the most devastating killers of mankind. Hopeless cases, though steadily decreasing in number, bring to the fore the difficulties of prevention and the failures of treatment. Among these rank highest the metastases which, whenever widely disseminated, constitute the clinical picture of carcinomatosis. The following two instances of metastasizing carcinoma were chosen because they seem to demonstrate most clearly the aforementioned point. Furthermore they exhibit a not particularly frequent combination of both neurologic and mental symptoms which present a number of diagnostic problems.

Observation 1. C. L. Family history is negative for nervous and mental disease. Patient's mother was operated upon for breast cancer a couple of years ago. A maternal aunt died of "cancer of the head." Patient is an only child. She was born in Delaware in 1896. She was a school teacher before her marriage. About a year prior to

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admission she started complaining of trouble with her left breast, and mastectomy was performed four months before admission. Two weeks after the operation she began to suffer intense nausea. She lost her appetite. She was unable to hold her food. She improved slightly for a few days and ate better. Then, one morning, she suddenly became stuporous. She did not recognize anyone, and as she came out of her comatose state, it was found that she had lost her vision. This distressed her a great deal in her conscious moments. She spoke very despondently and irrelevantly most of the time. She began to talk in a sing-song way about events of her past. She often spelled words, appeared to be teaching school and would make addresses to the children. There were times when she would scream all night long and threaten suicide. She became completely disoriented. She was admitted to this hospital on June 21, 1935 after previous observation over a period of three weeks at the Milford Hospital. Physical examination: small boned white woman of athletic habitus in a moderately emaciated state. Skin dry, dark. Generalized hypertrichosis. Left breast removed. Small nodules in left axilla. Oral mucous membranes dry. Teeth covered by brown film. Foul mouth odor. Blood pressure 146/90. Short, rough systolic murmur over third interspace just to left of sternum. Tachycardia, with regular rhythm. A few fine crepitant rales over left lung. Abdominal walls relaxed, with no evidence of tenderness or palpable masses. Nervous system: left pupil smaller than right and fixed, right pupil sluggishly reacting. Complete amaurosis. Linear scar across left cornea. Constant coarse tremor about the lips. Tendon reflexes normally active. No pathological reflexes. Laboratory tests: 2,700,000 red cells, hemoglobin 51%, 4900 white cells, lymphocytes 32, monocytes 4, neutrophiles 61, eosinophiles 3. Blood sugar 100, blood urea 14. Serological and spinal fluid tests negative for syphilis. Mental status: On admission, patient was semi-stuporous. She could be aroused and then became resistive and noisy, begging to be left alone. She was disoriented. She writhed in pain when gently moved, her head being particularly sensitive. She was

able to give intermittently fragments of her personal history. Most of the time she talked in a rambling manner. Refusal of food necessitated tube-feeding. For many days she regurgitated her feedings. She misidentified voices but gave no definite evidence of hallucinations. Yet she had lively imagery, resembling a hallucinated state. She often spoke aloud in a manner suggesting auditory hallucinations. She gave the impression of a delirious reaction in which affective elements of varied nature were interwoven. Progress: On September 22, 1935 patient had a clonic convulsion which seemed at first to involve the whole body but later became localized on the left side. Right pupil dilated. On September 29, 1935, the following neurological status was obtained: Patient extremely emaciated, lying in bed in supine position with legs and head turned to the left side. She moves her left arm almost constantly but appears unable to use her right arm in a similar way. From time to time the right forearm goes through rotating movements of small extent. There is a considerable amount of muscular atrophy and hypotonus of all limbs. Active and passive bending of head to the right side markedly limited, meeting with strong muscular resistance. The right pupil is much larger than the left. Both are fixed to light. Voluntary eye movements are mainly directed to the left or upper left and are accompanied by distinct nystagmus. The optic disks are of whitish color. Corneal and conjunctival reflexes appear diminished on the right side. Muscular twitchings about the right side of the face, especially mouth angle and lower lip. Bilateral wrist drop which can be overcome but slightly and temporarily by active movement on the left side. Biceps reflex positive on the left side. No other tendon reflexes obtained. Mayer sign negative on either side. Leri moderately developed on left, absent on right. Abdominal reflexes absent. Knees flexed, feet in moderate equinovarus position. Lower tendon reflexes absent. Plantar reflexes: flexion of all toes on the right side, flexion of the three lateral toes and occasional dorsiflexion of the big toe on the right side. Oppenheim negative on either side. Gordon positive on the right side, with

fanning of toes, negative on the left. Rosolimo and Mendel-Bechterew inconstant and rudimentary on right foot. No forced grasping. No verbal response to auditory or cutaneous stimuli. Involuntary loss of urine. Tendency to crying spells. At this time her hemoglobin was reduced to 45%. Blood urea nitrogen was 36 mgm. On October 18, 1935, her hemogram gave still more definite evidence of an aplastic anemia with 1,600,000 red cells, 36% hemoglobin and 4,350 white cells. In spite of anti-anemic therapy patient's general state did not improve. There was progressive weight loss in spite of feeding attempts by all possible routes. From December 3, 1935 on irregular temperature rises occurred with coincidental dehydration and continued physical decline. Five convulsions were reported during the night from December 7th to December 8th. She expired the following night. The clinical diagnosis of carcinomatosis remained obscure until an autopsy was performed by Dr. Douglas M. Gay. An extract of his pathological report follows: "Scar of a left radical mastectomy. The underlying tissue shows no evidence of tumor. The superficial lymphnodes are not enlarged—" "The scalp is not remarkable. The calvarium contains numerous soft pale red-gray irregular masses and tissue replacing the bone in many areas. Similar masses of tumor are present in the base of the skull where one especially large mass occupies a position just posterior to the right optic nerve and extends to the ethmoid sinus. There is apparently no involvement of the optic nerves." "Brain—weight 1000 gm. Slightly smaller than normal. The convolutions are evenly symmetrically disposed but are slightly flattened. The consistency of the brain is soft. The dura is adherent to the skull at the points of tumor metastasis. There are small masses of tumor on the under-surface of the dura, but none of these invades the brain tissue. The leptomeninges are thin and transparent. The arteries at the base of the skull are slightly sclerosed. Multiple sections through the brain show no other evidence of pathology. The anterior lobe of the pituitary is slightly enlarged, and the floor of the sella turcica is thin. The ribs on both sides show

numerous masses of soft gray tissue replacing bone. In several places there appears to be pathological fracture. A section through a lower thoracic vertebra shows tumor tissue invading the bodies. Other bones are not examined except by X-ray which shows an extensive bone metastasis. All of the lymphnodes examined appear normal." Histological report: Small masses of tumor are infiltrating the lymphatics of the pleura and peribronchial spaces. The tumor cells are small and arranged in groups with occasional slight tendency to gland formation. The infiltration of the tumor is accompanied by a moderate degree of fibrosis. Vertebra: The marrow spaces are filled with tumor which replaces the bone. Rib: Almost completely destroyed by tumor infiltration. The tumor has the characteristic appearance of breast cancer and is accompanied by an abundant connective tissue stroma. Skull: infiltrated with tumor similar to that described in other bones. Cerebrum: normal. Dura infiltration on one surface only, by tumor similar to that described. Pituitary: There are numerous cysts filled with bright red staining material in the intermediate portion. Anatomical diagnosis: Scar of radical mastectomy (carcinoma of left breast). Multiple bone metastasis. Emaciation. X-rays of the skeleton taken after patient's death revealed "metastatic carcinoma involving both lungs, all ribs, all dorsal and lumbar vertebrae, upper third of left and right humerus, pelvis, lower half of femur bones. Tibiae, fibulae and forearms spared." In the light of the pathological findings it seems plausible that both local pressure from tumor masses infiltrating the dura, especially in region of the spinal canal which unfortunately could not be examined, and factors resulting from the destruction of the functioning bone marrow and from chronic nutritional deficiency must have been operative in the production of the complex nervous and mental reaction. In his discussion of malignancies of the breast, James Ewing mentions the fact that "the dura and skull may be affected when the brain is free, suggesting an access by cranial lymphatics." "In a notable group of cases paraplegia develops early in the course of mammary car-

cinoma from dural or spinal metastasis." That metastasis to the vertebrae and skull is not rare, is demonstrated by a recent study of O. Saphir and M. L. Parker. They found, among 43 cases of metastatic primary breast carcinoma, involvement of the spinal column in 11 cases, of the skull in 3, of the spinal cord in 1, of the brain in 4 cases. In one case both skull and spinal column were involved. It should be instructive to compare our first case of extensive bone metastasis with the following report of metastasis to the cerebellum of a surgically removed primary malignancy of the breast in a male person.

Observation 2—W. W. Family history negative for nervous or mental disease, revealing no case of malignancy. The death of patient's father at the age of 68 was attributed to gastritis. Patient's life history does not contribute anything significant to the problem under discussion until he became ill in 1939. He was born in 1887, had a sixth grade education, held jobs as machinist and jewelry repair man, served with the Army and National Guard. His marital life ended in failure, in spite of genuine attempts on his part to make an adjustment. He drank heavily for the last four or five years while being out of work. Three years previous to admission he had an eye operation for cataract in the Army hospital at Dayton, O. Two years later he underwent an operation of his right breast. Just prior to this he had a period of physical exhaustion and, though he gave up drinking ten months before his illness, he continued to fail physically. Two months later his condition grew more acute with signs of staggering gait and peculiar behavior. Patient was admitted to the Delaware Hospital, Wilmington, on February 17, 1942, giving a history of weakness for about three months, of dull non-radiating, almost constant headache for the past two weeks and of poor vision. The physical examination revealed moist rales after coughing in the right posterior aspect of the chest and a right anterior cervical adenopathy, cicatrix of breast removal on right chest and a normal prostate with no nodules. A flat chest plate revealed the diaphragms smooth at normal levels and numerous rounded areas of increased density

averaging about 1 cm. in diameter, scattered through the chest. "In the first right anterior interspace, there is a large area measuring 2.5 cm. in diameter, and a large node measuring 4.5 cm. in diameter in the right hilum shadow. No areas of destruction can be seen in any of the ribs. Diagnosis: Pulmonary metastasis." There was no X-ray evidence of metastases to the skull. Laboratory tests showed a secondary anemia with 73% (11 gm.) hemoglobin and 3,700,000 red cells. Blood serology negative for syphilis. He was seen by writer at the Delaware Hospital on February 25, 1942. At that time patient complained of sharp pains in the occipital region, dizziness and staggering, starting about three weeks before his admission. The results of the neurological examination were as follows: Head: movements normal, no tenderness of the skull to pressure or tapping. Eyes: iridectomy on right side, left pupil normally reacting to light. Both eye grounds apparently normal. Extra-ocular movements normal. No nystagmus. Trigeminal nerves regular. Synergie facial movements weak on the right side, fairly well developed, however, poorly sustained on the left side. Tongue: protruding in midline with some tremor. Palato-pharyngeal arches normally elevated on phonation. Biceps reflexes positive and equal. The other tendon reflexes difficult to elicit. Thumb adduction phenomenon negative on either side. No spastic finger signs. Abdominal reflexes cannot be elicited. Cremasteric reflexes active and equal. Patellar reflexes positive on either side, distinctly pendulous on the left. Achillean reflexes positive. Plantar reflexes doubtful on either side. Absence of pyramidal signs. Sensibility intact for all qualities. Romberg trial positive, marked by coarse circular swaying of the body and a tendency to fall backward. Finger-to-nose test reveals past-pointing with the left hand below, and with the right hand to the left of, the nose tip. The heel-to-knee test shows a considerable degree of ataxia about equally developed on both sides. Patient is unable to walk with his feet put in front of one another. He tends to fall backward on thrusting his head back. There is marked adiakokinesis. The Barany test

fails to reveal any constant deviation. Gait with closed eyes shows a tendency to deviate to the left on stepping forward, deviation to the right side on stepping backward. Conclusion: Cerebellar syndrome due to malignant metastatic process without symptoms of intracranial hypertension.

The patient was discharged from the Delaware Hospital on March 2, 1942 in his brother's custody. During this period he spent most of the time in bed. Rapid mental changes were noticed. His memory for recent events became lost, and that for past events quite inaccurate. Patient spent two weeks in a Philadelphia hospital where he was taken in a stuporous state. His complaints were given as headaches of two weeks' duration and vomiting for two days. The left lateral lobe of the prostate was found to be "very firm." Patellar reflexes were hyperactive. No pathological reflexes were found. Hemoglobin ranged from 8.5 to 10 gms. The spinal fluid contained an admixture of red cells and was, on one occasion, described as xanthochromic. Spinal pressure was reported as 195 mm. water pressure. Colloidal gold curve flat. Sedimentation rate 30 mm. in sixty minutes. Blood urea nitrogen was 28.7. The most outstanding neurological change consisted of stiffness of the neck and psychomotor unrest. Patient left Philadelphia March 24, 1942 and was admitted to the Memorial Hospital in Wilmington the same day. He was described as extremely uncooperative and was transferred to the Delaware State Hospital on March 30, 1942. Physical examination: A 55-year-old white man of muscular habitus, in considerably reduced nutritional state, cyanotic about face and neck, with operative scar in region of the missing right nipple of the breast and with three subcutaneous nodules in the back. Blood pressure 84/70. Heart of normal contour with faint sounds. Pulse rapid, somewhat irregular. Bronchial type of respiration and dullness in the right upper perihilar area. No rales. Abdominal walls seaphoid and rather rigid.

Neurological examination of March 31, 1942: Pained expression of face, confused state with difficulty in responding. Extraocular movements difficult to evaluate. Mark-

ed nystagmus with fast component to the left side. The right pupil with changes resulting from iridectomy reacts very poorly, the left, smaller pupil somewhat better to light. Digital pressure to the right orbital margins is followed by reflex contraction of the homolateral facial muscles (Kehrer reflex). Corneal reflexes positive and equal. Protrusion of lower left lip following touch. Tongue and lower jaw slightly deviating to the left side. The left eye-ground shows a somewhat pale, poorly outlined optic disk with signs of beginning choking and a small fresh extravasation. Rigidity of neck with particular difficulty bending the head forward. Weakness of right arm and right leg. Forced grasping on right hand. Upper tendon reflexes positive, more pronounced on the right side. Spastic finger signs on right hand, none on left. Mayer active on either side. Abdominal and Cremasteric reflexes negative. Patellar reflexes active and about equal. Ankle jerks positive, more pronounced on right side. Plantar reflexes absent on right side, occasionally positive and often obscured by foot withdrawal on left side. Marked direct muscular excitability. Speech thick with difficult enunciation. Marked ataxia of left arm. Spontaneous tremors on either side. Flat skull X-rays did not show evidence of metastasis involving the cranial bones. Blood urea nitrogen 20, blood sugar 89. Hemoglobin 12 gm., 3,890,000 red cells and 21,700 leukocytes. Mental status: Patient, bedfast since his admission, making attempts to speak. Speech very indistinct. Refusal of solid food. Tendency to grasp hand of anyone near him. Sensorium apparently clouded. Patient became increasingly weaker and died in a state of coma on April 5, 1942. An autopsy was performed the same day. The pathologist, Dr. F. A. Hemsath, reported on its results as follows: "Body is that of a well developed and poorly nourished white man appearing about 50 years of age. Body free from deformities. Skin somewhat relaxed and dry. Abdomen soft and seaphoid. Right nipple absent, replaced by a vertical healed operative scar 8 cm. in length. There are no subcutaneous nodules. Extremities are free from edema. There is no lymphade-

nopathy. The brain is removed by the usual approach and weighs 1480 gm. Pia-arachnoid is thin and glistening. The sulci are flattened. The cerebellum shows a moderate pressure cone, and the left cerebellar lobe is distinctly larger than the right. Basilar vessels are free from sclerosis. Multiple coronal section of the brain shows a large hemorrhagic to gray metastasis, occupying the superior and lateral portion of the left cerebellum, and measuring 5.5 by 4 by 2 cm. The adjacent cerebellar tissue is pale yellow and moderately softened. The lateral ventricles are moderately dilated. The lateral midportion of the thalamus on the left shows a discrete hemorrhagic area 0.3 cm. in diameter. Structure of the brain is otherwise normal. Trunk: ventral section shows practical absence of subcutaneous fat. Heart weighs 325 gm. Structure normal, myocardium shows fair consistency. Coronaries are normal. Lungs: right weighs 825 gm., left weighs 540 gm. The right upper lobe adjacent to the hilus shows a large metastatic nodule with mottled red-to-gray structure measuring 7 cm. in diameter. Both lungs show diffusely scattered metastatic nodules varying in size from 0.5 to 2 cm. in diameter. It is estimated that about thirty such nodules are present on each side. The pleural cavities are free from adhesions. Liver weighs 2200 gm. The organ is moderately bossed. Section shows a number of large metastatic nodules which in the case of the left lobe are confluent. On the right the largest of these measures 7 cm. in diameter. In addition to these nodules the parenchyma shows irregular and unevenly distributed areas of increased density, which are somewhat paler in color than the balance of the organ. The architecture of these areas is not distorted, however. The gall bladder and biliary tract are normal. The pancreas weighs 100 gm. and shows normal structure. The left suprarenal is about three times normal thickness but free from gross evidence of metastases. The right shows normal size but a yellow adenoma is present in the upper lobe. This measures 0.6 by 0.8 cm. Left kidney weighs 150 gm. and shows a metastatic nodule 1 cm. in diameter. The right kidney weighs 125 gm. and a nodule 2.5 cm. in dia-

meter is present. Ureters and urinary bladder are normal. The anterior midportion of the lesser curvature of the stomach shows a submucosal metastasis with ulcerated central portion, measuring 3.5 by 2.5 by 1.8 cm. Several metastatic nodules measuring up to 2 em. are present in the small gut mesentery. Structure is otherwise normal. The promontory of the sacrum shows a ventral protrusion of the inter-vertebral disk. Diagnosis: Metastatic carcinoma involving the left cerebellum, lungs, liver, stomach, kidneys and mesentery. Left cerebellar softening. Cerebellar pressure cone. Internal hydrocephalus. Histological examination: Sections from the pulmonary tumor shows an undifferentiated, highly anaplastic large cell carcinoma growing in solid masses. There are no features of the growth identifying its point of origin. Metastases in the kidneys and liver show similar structure. Adrenals and pituitary are free from metastases. The hemorrhagic spot in the cerebrum shows a few malignant cells. Remarks: cell structure of the tumor is consistent with metastatic carcinoma of breast, and history of recent malignancy of the organ makes it highly probable that this terminal malignancy had its origin in the breast. Histological diagnosis: Carcinoma, metastatic to lungs, kidneys, liver and brain. To review this case briefly, within about a year following breast operation, symptoms resulting from metastasis to lungs and cerebellum developed. The pathological findings indicate that, considering the minute mid-brain involvement, the final outcome resulted essentially from the considerable rise of intracranial pressure due to brain swelling and liquor stagnation, from the complications of the cerebellar tumor mass, and not from the multiple metastases in the lungs or any other factor. It is important to note that no part of the skeleton was found to be affected in this case. This seems to be in accord with the clinical findings indicating absence of aplastic anemia. The course of the clinical picture demonstrates the advent of mental symptoms and the aggravation of the pre-existing neurologic symptoms to be a reaction secondary to the cerebellar focus.

Ewing states that, in primary breast carci-

noma "cerebral metastases occur in about 4 percent of autopsies. Any portion of the brain may be chosen, most frequently the cerebellum. Their late appearance indicates an origin through blood vessels." He comments on the occurrence of mammary carcinoma in males as follows: "The estimates of its frequency have varied from 0.86 percent of all mammary cancers (Williams) to 6 percent by La Forgue. Of 269 tumors of the male breast, 244 were carcinoma and three sarcoma (Schuchardt). Contributing factors observed include repeated trauma, zona, chronic eczema and attempts at nursing (Baumgartner). It occurs at slightly later age than in women but has been observed at 20 years. Poirier saw affection of both breasts. Unusual development and activity of the breast are predisposing conditions." "Chronic inflammatory processes may long precede the development of the tumor which is slow and insidious. When fully established, the process is less malignant than in women, the growth is persistent, many of the features of ordinary mamma carcinoma are observed, and local or general metastases may develop. Of 16 fatal cases, Williams found the average duration 61 months, in 13 unoperated cases, 38 months. Recurrences were notably early, average period 9.7 months." From M. Cutler and F. Buschke's text we may quote: "The incidence of cerebral and spinal cord metastasis as found at necropsy is 5 percent. The cerebellum is the most commonly involved. Bone metastasis is very common and spontaneous pathologic fracture may occur." Also "The incidence of mammary cancer in men is approximately 1 percent." One should assume on the basis of the preceding data that a sufficient number of cases of primary breast carcinoma in men with brain metastasis should have entered the literature. Unfortunately among the vast amount of accessible material no observation of this kind was found. The conclusion may be warranted that our case, though probably not unique, must be at least relatively unusual. This seems strange in view of the frequent incidence of metastasis of carcinoma of the male breast, according to Maurice D. Sachs, who mentions especially skeletal metas-

tasis. Finally it is felt that the mental aspect of the clinical pictures of our cases allow for some theoretical considerations. We find dysergasic reactions of a delirious or confused type in either instance, yet it seems most likely that they arise on a different etiological basis. In our case of wide spread bone metastasis the mental reaction is an expression of the vast systemic involvement whereas in the case with cerebellar and mid-brain metastasis the confused and somnolent state is the result of the altered intracranial hydrostatic situation apparent in swelling of the brain substance and in ventricular enlargement caused by tumor pressure against the inlet of the fourth ventricle.

Summary: Two cases of metastatic primary mammary carcinoma were discussed, the first one an extensive skeletal metastasis in a woman of 39 years of age, the second one a cerebellar metastasis in a man 55 years old. Both patients had undergone surgical treatment and had subsequently relapsed within one year. The neurological and mental symptoms were superficially similar; however, their etiology differed. The mental component was due to marked systemic reactions in one instance and to considerable increase in intracranial pressure in the other. The case of cerebellar metastasis of a male breast cancer appears unusual.

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TWO CASES OF BRONCHOGENIC CARCINOMA

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Of the 168 necropsies performed in the Delaware State Hospital from July, 1937 until April, 1942, two were on male patients who were found to have died from primary bronchogenic carcinoma. These case histories will be recorded.

CASE 1

Patient T. A., an Italian, was committed May 2, 1934. No life history was available because neither friends nor relatives could

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be contacted. This patient could read and write both English and Italian. He was grandiose and his information was not reliable. His friends claimed that he left Italy on account of trouble with his parents. He stated that he left school in Italy because he did not agree with the teacher that the earth was round.

Patient apparently did not have any steady occupation and worked in many places. In the records of the New Castle County Workhouse was the statement that he was committed there on three different occasions for the same offense; namely, selling intoxicating liquors illegally.

The patient was committed to the hospital the first time, May 1, 1934, being arrested by the police for creating a disturbance on the street by parading about and declaring that God was with him, stating that "happy days are here again." The police found out that for some time patient's behavior had not been normal. Some time previous to his arrest he had been employed as a cook in a Wilmington restaurant, but was fired from there within three weeks because he tried to dictate what was to be done, would not allow anybody in the kitchen, assuming the office of boss, and talked constantly in a rambling manner.

Physical examination on admission showed a 51-year-old white man about 5 feet, $7\frac{1}{4}$ inches tall and weighing 161 pounds. Nutrition was good. Left ear was of cauliflower type. He claimed that he was hurt while an inmate at Norristown State Hospital. Heart was found to be within normal limits. Patient had an aortic diastolic murmur indicating possibility of aortitis. Patient had varicose veins of both legs. B. P. 124/86. Lungs were negative to percussion. A few sibilant rales were detected on auscultation at the base of the right lung. It was considered that patient had a bronchitis. The abdominal wall was soft. Liver and spleen were not palpable. No venereal scars were found. Smear for GC was negative. Cranial nerves were apparently negative. Motor functions were fairly good. Neurological examination showed knee jerks moderately but equally overactive, also the Achillean reflexes. Babinski and Oppenheim were absent. Patient had an

ankle clonus which subsided after 24 hours. The upper tendon reflexes were present and equal. Abdominal reflexes were absent. The right pupil was larger than the left and elliptical in outline. The left pupil was almost pinpoint. Reaction to light was sluggish in both pupils, but reaction to accommodation was better. Eye grounds were normal.

Laboratory examination disclosed the following data: Urinalysis showed a trace of albumin, many leucocytes, some in clumps; few erythrocytes; few bacteria and a few round epithelial cells. Blood chemistry showed sugar 70 and urea 17. Blood count was as follows: Red cells, 4,100,000, with 85% hemoglobin; white cells 8,550 with 26 lymphocytes, 7 large mononuclears and 67 neutrophiles. Blood Wassermann showed acetone negative, cholesterol plus 1. Spinal Wassermann was plus 4 with a slight trace of globulin and a pressure of 24. No x-ray of the lungs was made at this time.

Mental examination showed the patient on admission to be coherent and relevant but very talkative and exhibiting marked grandiose trends. He, for instance, said that he was the originator of the plan to save the country from the depression—"The New Deal." He said also that he had been in communication with the President. He also expressed many ideas of persecution, declaring that he was put here by the "black hand," that a gang had framed him and that the Chief of Police of the City of Wilmington had helped them. He was emotionally very unstable, at times being assaultive and loud, then a few minutes later beginning to cry. He expressed many paranoid delusions toward several people whom he named. He claimed he invented the electric fan in 1901 but that the plan had been stolen from him. He was suspicious of everyone with whom he came in contact.

He apparently was hallucinated in the auditory sphere for he talked to imaginary friends and enemies. He was oriented for time and place. Memory was markedly impaired for the past. On October 10, patient's case was presented to staff and a diagnosis of General Paresis was agreed upon. Antiluetic treatments were instituted in May, 1934.

Patient completed a course of 15 injections of Mercurosal in weekly intervals in August. Thereafter he had a course of 15 injections of iodo-bismuthal, followed by tryparsamide. The first year he had two hyperpyrexia treatments—October 17th and December 7th. Both treatments were not very successful because patient was resistive and uncooperative. Mentally patient was unimproved. The first year his physical condition was fair. In February, 1935, patient started the second course of Mercurosal treatment and completed a course of 15 injections. At that time the patient claimed that he did not feel well but he did not express any definite complaints. He only mentioned once that he had spit up blood. From June until October, 1935, patient did not receive any antiluetic treatment. During this time he was sick with a slight elevation of temperature, and the urine revealed a heavy trace of albumin, a few hyaline casts and a moderate number of leucocytes. Specific gravity was on several occasions high. He was put on a nephritic diet. About the middle of August his urine was free of albumin but patient still was quite accusatory, claiming that physician had contaminated him with lues and nephritis; but at the end of August he was calmer and was allowed to go out for walks.

In October, antiluetic treatments were resumed and he received 11 injections of neoarsphenamine. After each injection patient complained that he did not feel well and he would cause much disturbance while treatments were given. On December 25, 1935, patient called his attending physician's attention to the fact that he occasionally had been spitting up blood. He stated that it usually appeared after he had had an antiluetic drug. He claimed that he did not have a real cough, but that he occasionally felt something form in his throat, which caused him to cough, and out came a little sputum with bright red blood. Patient was emphatic in stating that this seemed to come from his chest. The attending physician examined his lungs and he detected a dullness in the upper left lung which was more marked between the 4th and 5th rib, anteriorly. On auscultation the breath sounds were diminished over the dull

area and only a few moist bronchial rales were heard. The attending physician immediately thought that patient had an old tubercular fibrosis. At that time patient did not complain of any shortness of breath and it was not noticeable. His temperature remained normal. An x-ray was ordered. The x-ray picture was taken and the roentgenologist made the following report: "There is a homogenous shadow area in left apex with a tremendous lot of mottling and infection in both right and left lungs which gives every evidence of an unresolved pneumonia or empyema."

The attending physician at that time did not fully agree with the report and believed that the tumor in the left upper lobe was of syphilitic origin.

In the meantime patient's sputum was examined on many occasions and no acid fast bacilli were detected. His temperature remained normal most of the time from January until March. Though patient was at times bedfast, it was impossible to keep him in bed all the time as he did not consider himself sick and would insist upon getting up.

On March 14, 15, and 16, patient's temperature rose in the evening though usually in the morning it was normal. The lung findings on auscultation were the same. Another x-ray was taken, with the following report: "The lung has improved over 50% since last examination. There is still evidence of pneumonia at this examination."

The patient was permitted to be up and about the ward. Mentally he was calmer and more contented but he still was very grandiose and delusional. In April his anti-luetic treatments had to be discontinued. The patient at that time expressed complaints about reactions from the anti-luetic drugs, stating that he either became nauseated or was light-headed.

In the summer of 1936, the patient attempted to help with the ward work but it was noticeable that he soon became short of breath and somewhat exhausted. At that time patient became hoarse and had a dysphonia. His appetite apparently was poor and he suffered from anorexia. There was perhaps some pain on swallowing as he refused solid

food though he took liquids well. The laryngologist was consulted and upon examination of the patient made the following report: "There is some kind of mass on the left at the top of the larynx about the arytenoid and Santorini's cartilages." He recommended biopsy, which was also done. The pathological report stated, "Microscopic examination shows a small sheet of stratified squamous epithelium of normal appearance. Diagnosis: No evidence of malignancy."

Patient steadily grew weaker. From time to time his sputum was examined but remained negative until March 31, when it was found positive for acid fast bacilli. He again had an x-ray in December, 1936, the findings being "Except for a thickened pleura and a high diaphragm on the left side, there is no evidence of any active pathology at this examination." The following March (1937), a check on his lungs was made. At this time the roentgenologist reported "homogenous shadows extending from apex to base of left lung which gives every evidence of possible fluid. Impossible to see any of the lung except a small area at extreme lower base. I think this is a syphilitic lung with fusion."

However, in May when a recheck was again made, the diagnosis was changed to a far-advanced active tuberculosis and patient was bedfast. His temperature at times was from subnormal to mildly subfebrile. He continued to lose weight and would expectorate small amounts of blood. His mental condition remained unimproved. He was very resentful of having to remain in bed, stating he had only a catarrhal condition and knew he did not have tuberculosis because it did not develop in people beyond the age of 25. He claimed that he was locked up in the room just to deprive him of his liberty. Patient's circulation gradually began to fail. He died October 11, 1937. An autopsy was performed which showed on section numerous tubercles scattered in the left lung and a tumor of the left upper lung consisting of epithelial, squamous cells.

This patient, as we see, suffered from neurosyphilis, pulmonary tuberculosis, and bronchogenic carcinoma.

Rokitanski long ago emphasized the rare occurrence of tuberculosis and cancer in the same person at necropsy. Sison and Mousertatt reported that in the Philippine Islands, the incident of cancer in the lungs is low and of tuberculosis is high. The opposite view was expressed by Ewing, who stated that tuberculosis bacillus is one irritating agent, and one of the most important etiologic factors in bronchogenic carcinoma. He observed that of 31 patients reported by Wolfe, 14 had concomitant tuberculosis. Fried recently reported 13 cases in which cancer and tuberculosis co-existed, and he offered the opinion that the cancers do not originate in situ but in the bronchial mucous membrane and invade the cavity or tuberculosis scar. The process is a spreading of malignant cells from the bronchus to the line of tuberculous cavity, since the tuberculous cavity is lined with scar tissue it is incapable of producing epithelial cells; and therefore one can consider that tuberculosis and primary bronchogenic carcinoma may occur in two cases. They may occur together separately, or one may be leading cause for the other; as for instance, since carcinoma is a degenerating disease, it may lead to a tubercular condition because it reactivates an old fibrotic lesion. Whether tuberculosis may initiate a malignant process still continues to remain a subject of much discussion. Possibly our patient had a latent tubercular lesion which was reactivated by bronchogenic carcinoma.

CASE 2

Our second case, J. K., shows a family history of some interest. Two brothers died at about the age of 50 from unspecified carcinoma. One sister died of carcinoma of the breast. The mother died of diabetes.

The patient was first admitted to the Observation Clinic in July, 1932, where he remained until January, 1933. A short history was obtained but was of no particular significance. He was a laborer by occupation, did not have much schooling, going to a country school in Maryland until the age of 12 when he quit to go to work. He was married at the age of 40, in 1916. One son was born of this union.

Patient's mental status shows that in 1922

he had a period of depression lasting for 8 months. He had a second attack which was characterized by excited periods. This was in 1927, and lasted for 5 months. In 1929, he had a short period of depression, lasting for 3 months. Patient's condition was diagnosed at Observation Clinic as Manic Depressive Psychosis, Depressive Type, but in August, 1934, he had to be committed as a patient to the Delaware State Hospital. He was paroled in 1935 and discharged in February, 1937. His diagnosis on commitment was the same as that made in Observation Clinic.

Patient was re-committed to the hospital November 2, 1937, with the history that he had exhibited symptoms similar to those preceding his other attacks, such as having a ravenous appetite, being extremely irritable and demanding, etc. He began to develop the idea of mortgaging his home in order to set up a business, possibly as a storekeeper, and he told everybody that he soon would be rich. He created a disturbance in the church and became quite threatening toward the minister, which was the direct cause of his return.

His physical condition was fair. The patient's history revealed the following illnesses. In June, 1923, he was operated on for anal fistula and external hemorrhoids by a private physician in Wilmington. Patient underwent an operation for removal of epithelioma at the Delaware Hospital, December 14, 1931. The operation was performed by Dr. Mayerberg. According to the Delaware Hospital records, this patient claimed to have had a sore on the left lower eyelid for 3 years. He had consulted several physicians in regard to this but conservative treatment did not seem to do any good, therefore the operation was performed.

At the time of patient's last admission, he appeared very manic, boastful and abusive, and a change was noted in his physical condition since he had a high blood pressure—184/100, on admission. On October 11, 1939, the attending physician noted that patient had developed a small hard tumor about the size of a walnut on his neck anteriorly, left side, in the supraclavicular region. On October 16, 1939, the consulting surgeon exam-

ined the patient and advised that an x-ray be taken of patient's chest and lumbar thoracic spine. He also recommended biopsy to determine the type of tumor. An x-ray was taken on October 23, 1939, and no disease to right or left lung was found. Patient's physical condition remained unchanged until December, 1940. At that time it was observed that patient walked with a limp and he complained of pain in his left hip region.

An x-ray of the hip was made and showed the following: "There is an increased density of the left ileum just above the acetabulum with marked fuzziness of the borders. There are several spurs around the left hip. Diagnosis: Some hypertrophic arthritis of the left hip. The appearance of the body of the ilium probably represents periostitis. The same appearance is seen in an osteogenic sarcoma. This patient is rather old for this type of lesion."

At about this time the patient began to cough and expectorated blood-tinged sputum. Examination made of the lungs at that time showed a marked dullness in the left chest in the middle portion. The area of dullness was of longitudinal shape and measured about 2 finger widths in breadth and about 3 finger widths in length. There were rales in this area, which patient pointed out as the location of pain. X-ray of the lungs was taken and showed a definite enlargement of the left hilum shadow with finger-like extension into the surrounding lung parenchyma. This gave the appearance of a bronchogenic carcinoma. The roentgenologist suggested that a bronchoscopy examination be made.

From December 26 on, patient was confined to a sick ward. Off and on patient continued to raise blood-tinged sputum and brownish mucus, especially at night time. Some of the other patients claimed that this patient vomited blood on a few occasions. Patient continued to have severe pain in the left chest. B. P. remained elevated, being from 200/100 to 176/90.

A change in patient's condition was noted in January, 1941. At that time patient had a localized convulsive seizure of the right side of the body. During this seizure he was confused but not unconscious. After the seizure

was over, patient declared that it began in the right arm. At that time sodium luminal was administered intravenously and 15 minutes thereafter the convulsion subsided.

The patient was unable to move the right arm or right lower extremity and the right side of the face appeared somewhat smoothed-out and paralyzed. He could not take any solid food and remained on a liquid diet because of swallowing difficulties.

His temperature was slightly elevated. He had at that time a positive Oppenheim with wrist drop on the right hand. Speech remained impaired. His pupils reacted sluggishly to light. These epileptiform seizures without loss of consciousness occurred again on January 15, consisting of clonic movements of the right arm and neck musculature, followed by flaccid paralysis of the right upper and lower extremities. The deep tendon reflexes were completely lost for 24 hours. On January 27, patient's temperature started to rise and he showed at that time fine, moist rales over the right lower base. Patient did not give any further verbal responses. At times he appeared somewhat restless, inclined to turn on the right side by getting hold of the bed board, etc. At the end of January, patient was unable to swallow any liquids. He died January 31, 1941.

An autopsy was performed, with the following findings:

Sections from the pulmonary tumor show the growth to consist of large masses of rather highly anaplastic epithelial cells showing considerable variation in size and structure of cells and nuclei. Epithelial pearls are not seen. The cell type is probably squamous.

Metastatic nodules with similar cell structure are seen in the kidney.

Histological Diagnosis: Bronchogenic carcinoma, anaplastic squamous cell type. Renal metastases.

It was therefore definitely established by the autopsy findings that this patient had a bronchogenic carcinoma. It was considered that patient had a cerebral hemorrhage, and it is very likely that he had a metastases of the Central Nervous System, as bronchogenic carcinoma frequently causes involvement of

the central nervous system because of frequent association of lesions of the respiratory tract and lesions in the central nervous system. It is well known that patients with suppurative diseases of the lungs are particularly likely to have a metastatic process in the brain.

Dosquet in a study inspired by Lubarch investigated the necropsy material from the Institute of Pathology in Kiel and Berlin, finding metastases to the central nervous system in 33 out of 105 cases of bronchogenic carcinoma.

Levi and Simpson observed intracranial metastasis in 19 out of 139 post mortem examinations of patients with the same disease. Fried, in 38 cases with bronchogenic carcinoma, found 15 had metastases of the central nervous system, verified easily on operation or necropsy. Twelve of the fifteen cases were unusual in that they were diagnosed as tumor of the brain.

It very often happens that bronchogenic carcinoma is subjectively symptomless. The main symptoms are located in the Central Nervous System and such patients are frequently operated for glioblastomas. It also happens that tumors situated in the apex of the lung give a characteristic picture with Horner's syndrome. Such tumors are known as superior sulcus tumors. They may cause pressure to the nerve plexus, with resulting atrophy of the muscles of the upper extremities.

Bronchogenic carcinoma is more frequently diagnosed and undoubtedly is increasing in incident. Bela Halpert found that during the decade ending December 31, 1940, out of 12,072 necropsies, 8862 of which were on persons over 1 year old, 135 were found to have carcinoma of the lungs, 205 had carcinoma of the stomach and 66 had carcinoma of the biliary system and of the pancreas. His finding suggests that carcinoma of the lung is becoming the second if not the first most malignant disease of the male.

Thomas White and Sam Cohen observed 56 cases diagnosed as bronchogenic carcinoma, 37 of which came to necropsy and in the remaining 19 the diagnosis was established by biopsy.

Bronchogenic carcinoma is a clinical problem of equal importance to the internist, roentgenologist and surgeon; the internist has to establish a correct diagnosis as early as possible; the surgeon has to decide if it is possible to render help to the patient by operative procedure.

An early diagnosis of bronchogenic carcinoma is not easy to establish because unfortunately a patient with early carcinoma of the lung has no symptoms which are characteristic of this condition. Any respiratory manifestation in a patient past 40 years of age should be investigated in order to exclude the possibility of pulmonary malignant tumor. This statement is sufficiently justified by the high incidence of carcinoma of the lung. Only by constant vigilance can the early diagnosis of lung carcinoma be made. An acute infection of the respiratory tract which does not subside within a reasonable time in a patient past 40 years of age should be considered as due to a primary malignant tumor of the lung until this has been definitely excluded.

The most frequent symptom of bronchogenic carcinoma is a cough. Of 47 patients of Stoehberg and Lederle who had thoracic symptoms, cough was present in 91.5%. In 13 patients with bronchogenic carcinoma there were no symptoms referable to the chest at the time of admission. The most frequent complaints were as follows: Epigastric distress in 7 or 53.9%; anorexia in 7 or 53.9%; nausea and vomiting in 6 or 46.2%; malaise in 5 or 38.5%; loss of weight in 4 or 30.8%; constipation in 4 or 30.8%; and aphasia in 2 or 15.4%.

It is said that at first the cough is non-productive but later it is accompanied with expectoration. Although early the expectoration may be scanty and mucoid; later it becomes more profuse and mucus-purulent. Hemoptysis of the appearance of blood tinged sputum may be the first sign which brings these patients to examination.

In 25.8% of Brine and Kennedy series, symptoms of an acute infection of the respiratory tract were the initial manifestations. In their series hemoptysis was the chief complaint in 18.9%, but it was present at some

time during the course of the illness in 48.3%. Simmons reported its presence in 40% of the collected cases. Polenski expressed the opinion that pain is the most frequent symptom of lung carcinoma. Fried emphasized the significance of the persistence of the pain in spite of therapy.

Dyspnea cannot be regarded as an early symptom because in order to produce this symptom the lesion must have sufficient time to interfere with this function either by its size or by pleural effusion. Bloody effusion is of importance in establishing a diagnosis. Thoracocentesis is considered dangerous.

Symptoms which appear late are loss of weight and strength, cyanosis, dyspnea and hypertrophic pulmonary osteoartropathy.

The physical findings in cases of pulmonary malignant tumor are as protean as the symptoms, and are dependent on the location and extent of the lesion and the consequent secondary pulmonary changes. Ochsner and Baker have frequently observed no physical changes in cases in which the diagnosis was made by roentgen and bronchoscopic evidence. Limitation of expansion, dullness, decreased breath sounds and rales occur with great variability and are most frequently present in the late stages. In fact, the presence of obvious physical signs is generally indicative of inoperability. Owing to circumferential growth, the vascularity of the tumor in its central portion becomes impaired, which results in necrosis and abscess formation. Many clinicians consider that pulmonary abscess without antecedent pneumonitis or aspiration of a foreign body should be considered of malignant origin until proved otherwise.

In order to establish an early diagnosis a routine posterior-anterior roentgenogram of the thorax must be interpreted in conjunction with the fluoroscopic examination. The roentgenologist, aided by intrabronchial use of radio-opaque substances and the bronchoscopist supported by microscopic biopsy, are at present the chief aids in secondary diagnosis.

Carcinoma of the lung may arise from three points of origin—the bronchial epithelium, the bronchial mucous glands or the al-

veolar epithelium. The most frequent type arises as a squamous cell carcinoma of the bronchi. There are various gradations of differentiation of these epithelial tumors. The undifferentiated forms of squamous cell carcinoma and rare adenocarcinoma show more widespread metastases. In the differentiated forms of squamous cell carcinoma the regional lymph nodes are usually the only sites of metastases.

Metastases from primary malignant tumor of the lung extend, as do those from malignant tumors elsewhere, in three ways; namely, by direct extension, through the lymphatics and through the blood stream. A fourth method of extension is bronchial embolism. This has been described by Lumsden as surface spread.

As mentioned, the majority of these tumors arise in the bronchial mucosa. From this origin they can assume a varied development. They may develop by intrabronchial tumors; they may grow via the bronchioles into the alveoli producing a picture simulating pneumonia. Usually, however, the tumor bores through the bronchial wall and grows an infiltrating tumor around the bronchi and vessels, producing a radiating tumor mass progressing from the hilus toward the periphery. After having broken through the bronchi, the tumor may invade the lung parenchyma of one lobe and for a time may be limited by the lobar pleura. After having broken through the bronchial wall, the disease may infiltrate the lymphatic vessels producing the lymphatic form of carcinoma.

In a mental hospital a physical diagnosis is often difficult to establish because the patient does not express his complaints for many reasons. At times he may be delusional and antagonistic, or at times confused. However, at times the attitude of the physician is not always proper, since it is well known that less experienced physicians like to complicate symptoms of diseases and very often the older, more experienced practitioner is prone to miss a more complicated disease.

In mental hospitals patients may pay attention justly to certain symptoms, and yet the physician may take the attitude that this

patient is either delusional or hallucinated, therefore overlooking the illness. For instance our patient noticed that arsenicals caused him to spit up blood and he complained of generalized malaise but it was disregarded for some time. The second patient complained for a while of pains in his knees and of course was treated with salicylates to relieve the pain.

In these two cases one could hardly have rendered any help by making the diagnosis in time since they had other diseases and were rather old.

The only way of helping people ill with bronchogenic carcinoma is to make the diagnosis in more or less younger people as soon as possible and to look for a competent surgeon who can institute surgical treatment by complete removal of the whole lung and regional lymph glands.

ELECTRIC CONVULSIVE THERAPY IN MENTAL DISORDERS

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Electro-shock therapy is the most recent, drastic method adapted by the medical profession in the treatment of mental disorders. At the Delaware State Hospital, contrary to many reports, insulin therapy did not give a much greater percentage of remissions than that obtained by the less radical measures, such as occupational therapy combined with various types of psychotherapy, except in incipient cases. Few old cases who were considered as chronically deteriorated did show delayed reaction towards improvement but no recovery. It was not felt that these patients ever showed better ward adjustment than before. Two cases out of our series even showed a marked regression, one of these later improved to a certain extent with intensive psychotherapy but the other one never returned to the preinsulin level. In fact, because of certain symptoms it seemed entirely possible that definite brain damage of an irreversible nature had occurred. Better success was obtained by the use of metrazol, but contrary to some authorities we felt that the strong fear emotion was not beneficial. Al-

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though the behavior of some patients might improve because of fear this was apparently not due to an improvement of the pathological factors but rather a method employed by the patients, to avoid further treatments if possible. In spite of this the success obtained by metrazol therapy was considerably better than that obtained with insulin particularly in the affective disorders. The results obtained in Dementia Praecox cases, especially of chronic nature, were almost negligible. Moreover, there was a definite element of danger in introducing into the body a stimulant powerful enough to produce convulsive seizures, since this stimulant necessarily had to be general and not local. In addition, there was a relatively high percentage of fractures and dislocations due to the severity of the muscular contractions. A few years ago it was found that convulsions could be produced by an electric current, these convulsions being less severe in nature and if properly given, causing no fear reaction on the part of the patient. Results obtained compare favorably with the other drastic methods. Given the proper dosage, these patients complain only of a certain amount of amnesia of varying degree and some muscular soreness. In those cases which recovered the cure was complete with adequate insight.

The machine employed in the Delaware State Hospital uses an alternating current and is of simple design, easily handled with complete safety due to a specially constructed device which prevents any current from entering the body beyond the limit of safety. The average time of exposure to the current lies between two and five-tenths of a second. The milliamperage employed ranges between 250 and 500. Although some authorities speak of subconvulsive doses there is a certain danger that consciousness will not be lost instantaneously and if this occurs, there will be the same fear reaction found in the use of metrazol. For this reason we find it necessary not to employ smaller doses than those previously mentioned. It has also not been found necessary to use a higher dosage, although others have found it necessary in certain cases. The preparation of the patient is simple. He receives no breakfast on the morning the treat-

ment is given and a urinalysis is done to determine whether any kidney damage has occurred previously. It must be stated here that we have as yet found no report of any such injury. The patient is dressed in a loosely fitting garment and placed on a wooden table with a rather firm mattress containing no metal parts. Two electrodes are employed which are placed on each temple, the temples previously having been lubricated by electrode-jelly, as well as the electrodes themselves. Though some authorities have advocated the use of pads soaked in a high percent saline solution, we have not found this necessary. If no convulsion is obtained, the time is increased about one-tenth of a second and the dosage about 50 milliamperes. In some cases it is only necessary to increase the potential rather than the time. We have never allowed much time to elapse before the second trial is made. At no time are more than three attempts made on a single day as we have found that on another day convulsions may readily be obtained by the same initial dose. The physiological reason for this discrepancy has not been adequately explained as yet. The treatments are given twice weekly. The convulsions resemble the grand mal type of an epileptic seizure. The patients often manifesting the postconvulsive symptoms such as confusion, mild disorientation, drowsiness and muscular soreness. The initial tonic phase usually lasts from four to twelve seconds, being followed by a chronic phase from 25 to 60 seconds. A delayed reaction may occur but this in our experience has never lasted more than five to ten seconds. It is of course necessary that certain detailed examinations precede the electro-shock therapy. It is important that the individual is in fairly satisfactory physical condition and is not suffering from any severe organic disease, such as active tuberculosis or inactive tuberculosis of short duration, kidney disease, acute infectious conditions, decompensated heart lesions or severe arthritic changes. Urinalysis and X-ray of the spine should be done in all cases, whereas, electro-cardiogram is only desirable if clinical symptoms of cardiac nature are present or to protect the institution. An emergency tray consisting of

caffeine sodium benzoate, coramine, adrenalin and lobeline should be present during the procedure, although we have seldom found it necessary to use more than properly applied artificial respiration for a very short period of time. If there is, contrary to the normal findings, a sudden drop in systolic and diastolic blood pressure, the treatment should not be continued or at least given only with considerable caution. There have been no deaths reported as being caused by electro-shock therapy. However, latent cases of tuberculosis have been known to be reactivated by the treatment. Other complications are compression fractures of the spine, of which we had only three in a series of 141 cases. We can state that these factors cause the patient practically no discomfort and require only a short period of complete rest in bed. The most serious complication we had was a fracture and dislocation of the humerus. In addition, we had three dislocations of the jaw which were readily reduced. We feel that no resistance or force should be offered during the convulsion and that the patient should merely be guided and so prevented from performing a too sudden initial jerk. There is no special after-care necessary except to watch the patient through the confused period following the treatment to prevent him from injuring himself or others.

When shock therapy was first introduced, as we have stated before, it was accepted enthusiastically as a remedy for all types of functional psychosis. We have soon found, however, that this was not true and that the affective disorders were the only ones substantially benefited by this treatment. It is true that certain cases of Dementia Praecox did make a better ward adjustment and were less noisy and destructive but rarely was a complete cure obtained unless the disease was of less than one year duration. Its chief value in the treatment of the more chronic types of Dementia Praecox lay in the hospital improvement which enabled the patient to lead a more useful and comfortable life. It was also found that these patients did not maintain their improvement indefinitely but that it was necessary to give them repeated treatments of one or more shocks if they

relapsed. Whether this will ultimately result in organic damage to the brain has not yet been definitely determined as the treatment is still too new. However, animal experiments would seem to indicate that this risk is slight and indeed much less than the dangers found in insulin or metrazol therapy.

Among the 141 cases in our group there were 35 diagnosed as Manic Depressive Psychosis, 89 as Dementia Praecox, 7 as Involutional Melancholia, 6 as Psychoneurosis and 4 among other types. Of the 35 cases of Manic Depressive Psychosis 13 recovered completely, 10 more to the extent that they were able to go home, 11 more on showing definite improvement but still requiring further treatment. One showed no improvement, this being a case of chronic mania of long standing upon whom finally a bilateral leucotomy was done. At present this patient shows all evidence of recovering from her psychosis after this operative procedure. Of the 89 cases of Dementia Praecox only two made a complete recovery. Twelve recovered sufficiently to be allowed to visit home; 47 showed an improved ward adjustment while 28 showed no improvement whatever. Of the 7 cases of Involutional Melancholia, 5 recovered completely, 1 became well enough to be returned home and one showed an improved hospital adjustment. All showed some improvement. Of the psychoneuroses, and the other group comprising ten cases, three recovered, 5 became well enough to go home, 1 showed better ward adjustment and only one showed no improvement at all. From these statistics it can be seen that the chief value lies in the treatment of the affective disorders. It may be argued that most affective disorders show a spontaneous improvement. However, if properly treated by shock therapy, the duration of the psychotic period may be markedly lessened which is not only of benefit to the patient but is of decided economic value to the hospital and the community. In the treatment of praecox cases the value lies in the fact that violent and destructive patients became less so, this leading to marked savings to the institution. Moreover the morale of the employees is considerably raised due to the fact that they see that something

can be done for these formerly hopeless cases. In our series we encountered only 19 cases who relapsed, most of them being old cases of Dementia Praecox. In most of the cases of the affective disorders who relapsed it was felt that there might have been some error in technique. The treatment does not seem to be irreversible and after the maximum benefit has been arrived at, further treatment may cause a return to the former psychotic state. As in all first class therapeutic technique the greatest problem seems to lie in determining the point of termination. If the patient should show no improvement after five or six convulsions, it is usually useless to continue. On the other hand, complete remission is seldom obtained by less than ten to fifteen doses in new cases and fifteen to twenty in old ones. However, some patients have improved with as little as three shocks and others have reverted after five. To determine when the maximum benefit has been reached requires a close study of the prepsychotic life of the individual. One cannot hope to improve the normal personality trends of the patient. This treatment must not be taken too optimistically since we know that reverses do occur. The patient still needs careful supervision or depressed cases may become suddenly suicidal. Probably one factor in avoiding such disastrous results lies in the recognition of the fact that shock therapy merely shortens the course of the disease but that intensive psychotherapy is essential if we are to prevent further attacks. In resume we can say that of the 141 cases treated, 15.6% showed a complete recovery with adequate insight. Most of these were entirely convinced that their recovery was due to the electro-shock therapy; 20.5% showed good social recovery but insight was not complete and continued psychotherapy was still indicated to avoid a relapse; 42.5% showed considerable improvement in hospital adjustment and even became helpful in carrying out institutional work. Many of these showed a tendency to relapse but one or two additional shocks resulted in a return of the improved status. Of the 21.3% that showed no improvement most were cases that had been in the institution for five, ten or more years and were probably too mark-

edly deteriorated for any therapy to be of value. From the results obtained it would seem that electro-shock therapy has been so far the most promising one used in functional mental diseases as the percentage of improved cases is considerably higher than with any other treatment. Electro-shock therapy has definitely established its usefulness in the armamentarium of the psychiatrist.

A PSYCHOSOMATIC STUDY OF THREE CASES OF BRONCHIAL ASTHMA

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The significance of emotions in provoking asthmatic attacks was first stressed by Hippocrates who said that persons suffering from asthma should avoid getting angry. Throughout the history of medicine, numerous authors have described observations of persons whose asthmatic attacks were intimately related to situations of emotional tension. A "neurogenic" etiology of asthma was widely accepted until the discovery of allergens as asthmagenetic factors led to an entirely new clinical and therapeutic concept. Subsequent clinical experiences have shown, however, that a one-sided and exclusively allergic approach to the problem of the etiology is by no means satisfactory. This is particularly true in regard to the precipitation of attacks, the circumstances of which reveal no evidence of the presence of atopens to which the patient is hypersensitive. It is also common knowledge that often patients fail to develop attacks when unaware of the presence of atopens to which they are known to be hypersensitive. There are, on the other hand, patients who develop attacks when merely anticipating or imagining exposure to an asthmagenetic materia. Recent systematic investigations on large scales have clearly shown that the emotional component is of fundamental importance. Thomas French in his recent monograph, "Psychogenic problems in bronchial asthma" summarizes his findings as follows: "Emotional and allergic factors stand in a somewhat complementary relationship to each other in the etiology of bronchial asthma. In some cases asthmatic attacks may

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be precipitated by allergic factors alone, in others perhaps by emotional factors alone and in still other cases, cooperation of allergic and emotional factors may be necessary to produce the attacks." This formulation indicates the complex character of the etiological problem and shows the variety of factors which have to be considered in each individual case. Neil McDermott and Stanley Cobb reported on "A psychiatric survey of 50 cases of bronchial asthma." This study is of general interest to every practicing physician who comes in touch with cases of asthma, since the cases which were referred to the psychiatrist were not specifically selected but simply taken from the case material of the allergic clinic and medical ward of the Massachusetts General Hospital. The psychiatric examination classified 60% of the cases as caused by emotional factors, 14% were found to be questionable as to the emotional etiology and 26% were found to be completely free from emotional factors. It is also quite interesting to note that females predominated in the first group whereas males predominated in the latter group. Studies of this sort show that a broad-minded approach is being introduced in the clinical management of bronchial asthma. It is obvious that evaluation of allergic and somatic factors together with the emotional situation must improve the prospects of a rational basis for the therapy of asthma.

It is the purpose of this case study to present three cases of typical bronchial asthma. The development and the subsequent clinical course is presented together with the existing life situations of the patient. These three patients were admitted to the hospital because of emotional and mental difficulties. The diagnosis of asthma bronchial in each case was made prior to admission to this hospital and the allergic factors were established by the usual test methods. It must be considered a distinct advantage that these patients live on the wards of the hospital since this fact enables the physician to have the closest possible observation. Patients seen in the office or in out-patient departments may fail to mention particular circumstances which may have precipitated the asthmatic attack

due to the presence of asthmagenetic materia. Or the patient, being unaware of the importance of emotional factors, may omit describing details of a situation which would be of importance in the understanding of psychogenetic factors. The prolonged period of intimate observation of these cases created an acquaintance with the pattern of the asthmatic attacks and their relationship to the emotional situations.

Case One (No. 4852) :

The female patient, now 64 years old, entered the hospital first in 1929 with a short history of depression, loss of weight, irritability and insomnia. She heard voices condemning her and she suffered from attacks of acute fear and anxiety. Physically, she appeared underdeveloped and undernourished but otherwise seemed to be in fair general condition. Laboratory studies, including an X-ray series of the gastro-intestinal tract revealed no contributory data. Patient's life had been simple but filled with tragic events. She completed school at the age of 15 and remained at home to help with the house work. Her father suffered from involutionary melancholia and had to be cared for at home until his death. When the mother died of a stroke the patient had to take charge of the home and two invalid brothers. One is almost blind, the other became paralyzed following a neck injury. The economic situation was poor. The two healthy brothers who support the home are farmers of small income. The most tragic event of her life occurred when her fiancee, who worked in a dynamite factory, was accidentally blown to pieces. Hereafter, patient became progressively introspective and spent most of her time at home with her invalid brothers. She often mentioned to neighbors and friends that she had nothing to live for and that she would want to die if she did not have to care for her helpless brothers who needed her badly. As she grew older, she experienced vague pains and was treated for what seems to have been symptoms of vasomotoric instability. At the time of the menopause, she became increasingly irritable and depressed. She wandered about the house and wanted someone to hold her hands nearly all the time. A conflict arose

between resignation and sense of duty toward her brothers and undermined her emotional balance to such an extent that her admission to this hospital became necessary. She was quite agitated at that time and blamed herself constantly for neglecting her brothers. She heard voices blaming her for sexual sins which she imagined she had committed. A routine vaginal examination caused her to become quite concerned—the hymen was partly ruptured—and she exclaimed, "I did not mean to do anything wrong." After a few weeks, she quieted down and began to improve mentally and physically and she left the hospital three months later.

It was one year after that the patient had her first asthmatic attack which occurred a few minutes after she had taken an aspirin tablet. The symptoms were so severe that she "almost lost consciousness." She had never taken aspirin before and subsequent tests revealed hypersensitivity to aspirin and all coal tar products. The attacks were typical asthmatic seizures and responded promptly to adrenalin injections. They re-occurred at frequent intervals and necessitated a series of treatments which helped her for a while. However, in 1937, the mental and physical condition again grew worse. Asthmatic attacks began to interfere with her work and she gradually became deeply depressed. A cousin and later a practical nurse had to stay with her while she grew apathetic and listless. She lost interest in doing anything about the house and even in caring for her own wants. The old conflict occupied her mind; she stated on various occasions that as she could not care for her brothers there was nothing left for her to do but die. She was re-admitted to this hospital in a mental and physical state quite similar to that of her first admission. Anxiety and melancholy with periods of acute agitation were marked at this time. After a few weeks she began to take some interest in ward activities although the depressive and self-condemnatory features still remained prominent. She would say, for instance, "I keep wanting to go home but I am not able. I always tried to be a good woman but I don't know—I am not what I ought to have been. Oh, my dear brothers—

it will break their hearts. They have always thought I've been such a lovely sister to them; what are they going to do with me." These sentences were punctuated with whines of "Oh, Oh my." Her mental condition was more severe than on previous admission and it became necessary to transfer her from the receiving ward to a ward for patients suffering from chronic conditions. She seemed to resent this transfer and began to attract attention by rather dramatic acts, such as approaching the nurse or physician and collapsing at their feet. On one occasion, when visited by her brother, she threw herself on the floor, put her arms around his legs and tore her dress. It was at this time of panic that patient had her first asthmatic attack since admission to the hospital. Subsequent attacks were at times rather severe but responded promptly to atropine and adrenalin. Physical examinations including electro-cardiogram were essentially negative. An acute infection of the upper respiratory tract left her in a weakened condition. Appetite was poor. She complained of lack of even the slightest energy and remained in bed for many weeks. The depression deepened and she became almost uncommunicative. Asthmatic attacks began to coincide with states of anxieties and "loneliness." She would beg the nurse to stay with her and if the nurse had to leave to attend other patients, she would immediately have difficulties in breathing and even fully developed asthmatic seizures. Change of physician, nurse or attendant, almost with certainty precipitated attacks. The use of sedatives proved helpful in preventing anxiety attacks and injections of sterile water hypodermically often relieved the asthmatic seizures. Her depression has remained stationary in spite of all therapeutic efforts. She is melancholic and complains "life has meant nothing to me." There are no more states of agitation as she has given in to resignation and talks now only rarely of her brothers. Anxiety states, however, are frequent nightly occurrences. Frightening dreams scare her and a feeling of loneliness overcomes her when she goes to bed. Asthmatic attacks occur mostly at this time but sedation when given in the early evening may prevent their

development. Some of the attacks are severe and require adrenalin or atropine, but they may also be stopped with sterile water injections at times. Patient is a poor eater and her physical state can only be called fair. In addition, there are now marked signs of aging.

Case Two (No. 758) :

This female patient, now 52 years old, was admitted to this hospital after having spent many months in different general hospitals for severe bronchial asthma. Her condition seemed to grow worse in spite of every possible physical, medical and even surgical treatment. Following a psychiatric consultation, she was admitted to this hospital.

Patient's early youth was apparently happy and uneventful. She was considered to be a brilliant student and was always at the head of the class. Her personality was characterized as even tempered, well poised, kind and sympathetic. Upon graduation from college, she accepted a position as a Latin teacher in a high school. At the age of 21 she married a businessman and later became the mother of three children. When young, she went through two serious illnesses—typhoid fever and influenza in 1918—from which she recovered without sequelae. Aside from these illnesses, she has enjoyed very good health. The first asthmatic attacks—at first very mild in character—came on at the time of the menstrual period and during sexual intercourse. The attacks gradually became more severe and were treated by patient's father, a physician, with different drugs including morphine. Patient was in the fourth decade of her life when the asthma became a seriously interfering factor. It was at this time that she had to face some important life problems. Her husband, a quite extroverted, easy going, good natured man, suffered serious financial reverses which affected the economic situation of the family considerably. The grown-up children left the home and she became more aware of some deep-seated marital difficulty. She became irritable, pedantic and worrisome. The asthmatic attacks began to predominate. A consultation was decided upon and patient went to the Johns Hopkins Hospital where several

examinations and tests were performed which showed hypersensitivity to a variety of substances including house dust, duck feathers, chicken, egg yolk, etc. Several other hospitals and physicians were subsequently consulted since the attacks became more frequent and undermined her health. Marked cyanosis and dyspnoea were of such severe nature, at times, that she had to be hospitalized on several occasions. A bilateral Caldwell-Luc operation was performed for chronic sinusitis which was thought to be partly responsible for the asthma. It soon became apparent to the members of the family that she could not tolerate the slightest provocation. Every interruption of her daily routine, all unpleasant news, would precipitate new attacks. She became increasingly domineering and asked for constant attention. There were periods in which she displayed marked anxiety, imagined terrible things to have happened to her husband or to the children. Several of the treating physicians suggested to her that her emotional state was largely responsible for the precipitation of the attacks. Her condition grew steadily worse and she remained in a general hospital for 10 months, at the end of which time she was transferred to this hospital. Her medications consisted of aminophyllin injections, luminal, belladonna preparations, adrenal cortex, digitalis, liver extract, chloral hydrate, codein and several other drugs. She was frequently put in an oxygen tent. Theelin preparations were given since she ceased to menstruate during this time. While hospitalized, her mental condition became alarming. She claimed to hear voices, saw policemen entering the room to arrest her son. Some of the psychotic manifestations were attributed to the overdosage of daily administered drugs. There were, however, some delusional features noted, which seem to bear some intrinsic relationship to her emotional state. She believed herself to be pregnant and told her husband that she was artificially inseminated by the physician. She accused the doctor of having sexual relations with her. On one occasion, she claimed to have seen a wooden leg standing just inside her doorway. Between these delusions of a sexual nature and attacks

of anxiety, in which she saw her daughter hanging or her son killed in an automobile accident, she had periods of elation in which she had visions of places dear to her from childhood. She exclaimed that the hospital and her room ran on some kind of a trolley wire to the places of her childhood thus bringing her back to the scenes of pleasant memories. Asthmatic attacks during all these months were very severe and occurred almost daily. She constantly demanded medications and was finally put on injections of sterile water and sugar capsules with good results.

Patient came to this hospital voluntarily and appeared pleasant and cooperative on admission. A few hours later, she had her first attack. She at once became demanding, irritable and began to complain that no intravenous treatments were given. During the next few days she refused to eat unless she would receive more medication. She complained of severe insomnia and became increasingly antagonistic, wanted her own ideas carried out rather than those of the physician. Physical state on admission was rather poor. She appeared somewhat undernourished and generally weakened from prolonged confinement to the bed. Circulatory system was essentially negative, blood pressure was 130/80. X-ray studies of the lung showed "some scarring of old, healed Tb. in the right apex and a moderately advanced emphysema." Basal metabolism was plus 12. Blood examinations, including chemistry and serology, were negative. A moderate leucocytosis was frequently found, but there was no evidence of eosinophilia. Sputum showed Curschmann's spirales. Urine was negative.

Patient's initial resentment toward the firm attitude of the physician in giving her only the absolutely necessary amount of medication became so strong that she demanded to be sent home. She craved injections and medication and tried almost constantly to impress the seriousness of her condition upon the physician and nurses by refusing food. Asthmatic attacks were very frequent and some of them were rather severe, requiring repeated administration of adrenalin. The therapeutic management of the case, however, was decisively centered upon psychotherapeutic inter-

views. The emotional element in her condition was discussed and she began, gradually, to understand herself. She refused at first to see the relationship between asthmatic attacks and her emotional situation in the belief that she had to defend herself against the suspicion of "putting on," but she developed a gradual understanding of the influence which her underlying emotional tension exerted upon the pattern of the asthmatic attacks. It was interesting to observe that she would often become the victim of a severe respiratory embarrassment if alone and that such an attack would subside quickly when someone entered the room in order to converse with her cheerfully. She was usually not aware of the relief which she obtained from company but she talked about "panic-like states" which she experienced when alone. The present condition is very encouraging. Asthmatic attacks are rare and no specific medication is being administered. Insight is now considerable. She speaks of how important it is "to be frank with oneself." She mentions—although somewhat reluctantly—marital problems as the cause of her inner tension. Subordination to her husband's way of life and repression of vital feelings throughout many years of married life seemed to have resulted in gradual development of a state in which anxiety and revolt both were strongly represented.

Case Three (No. 7732):

This male patient, now 57 years old, entered the hospital first in 1937 with complaints of great nervousness, insomnia, a variety of vague somatic complaints and attacks of bronchial asthma. The immediate reason for his admission was his inability to fulfill his duties as a policeman in a small town, a job which he had held for several years after financial reverses had forced him to give up his position of commission merchant.

He was born in a small town, being one of twin boys. The twin brother died in infancy. His school education was quite limited since the family was poor and needed his help on the farm. He married at the age of 19 and remained for many years on the farm. His personality was described as easy going, so-

ciable, pleasant, although not affectionate, and often quite reserved. His hobby was hunting and he often left the house for days without telling the family when he would return. The marriage was not too happy, since he spent a great deal of his time with other women and began to drink heavily. Another brother is also known as a heavy drinker. After many years of farm work, patient started to buy and ship vegetables in car loads. He soon lost a great deal of money and got into financial difficulties. After several years of struggling, he obtained a position as policeman. He fulfilled his duties quite satisfactorily but he became increasingly nervous and irritable and began to complain about headaches, insomnia and asthmatic attacks. He had had asthmatic attacks for some time but they did not cause him much trouble. Now, however, they became more severe and necessitated treatment consisting of injections of adrenalin. Skin tests showed hypersensitivity to eggs, asparagus, feathers and pork and some other things. Since these attacks occurred mostly when he could not fall asleep, he was given sedatives in increasing amounts. Pains in different regions of the body of rather vague nature bothered him a great deal and interfered with his working ability. Every arrest which he had to make excited him to such an extent that he was finally unable to go on with his job. He was referred to this hospital for observation.

Physical examination revealed him to be well developed and of pyknic habitus. Heart seemed slightly enlarged to the left and occasional extrasystoles were noted. The blood pressure on admission was 180/100 but dropped after a week to 130/90 and remained at this level. Lungs seemed somewhat emphysematous and wheezing sounds were heard at times. Marked vasolability was noticeable. The other findings were noncontributory and laboratory studies, including X-ray pictures of head and chest, blood and urinalysis were essentially negative.

Patient was extremely unstable emotionally and became very easily upset, cried often and complained of homesickness. He was inclined to attach undue significance to somatic

sensations but he responded rather well to psychotherapy which consisted chiefly of reassurance and building up of self confidence. Psychometric tests revealed him to be of low average intelligence and it seemed obvious that part of his maladjustment to his life situation was based upon his intellectual inadequacy. He left the hospital after 5 weeks in an improved condition. Nervousness had decreased and he resumed his duties as a policeman. However, he soon suffered from feelings of insecurity and started to drink heavily. He also began to take sodium amytal capsules for nervousness and insomnia. Alcoholic intoxications undermined his health and caused an automobile accident in which he fractured two ribs. He was readmitted in a hallucinated condition with a blood pressure of 204/108. The psychotic symptoms were typical for acute alcoholic hallucinosis; they disappeared after a few days but patient remained very depressed and irritable for many weeks. Asthmatic attacks were not very frequent at this time. He was improved mentally and physically when discharged again. He made a new attempt to adjust himself but encountered great difficulties as he was not able to find steady employment. Patient did not receive permanent appointment with the police force but was only given work as a relief officer on weekends and at night. This caused him considerable worry and disappointment. He obtained irregular jobs but he could not make enough money to provide for his family. Asthmatic attacks became quite frequent and severe and he constantly gave himself hypodermic injections of adrenalin. He purchased large amounts of sodium amytal capsules and took as many as 6-8 per day. He became very depressed, often remained at home for days sitting around and staring into space. On one occasion, he remarked, "I'll put myself to death. I'd be better off dead." One more attempt was made for an improvement of the economic situation. He borrowed money and opened a small gasoline station. Business picked up slowly but he did not have sufficient endurance and became discouraged. His sodium amytal addiction caused an increasingly stuporous condition. He burned him-

self quite severely with ethyl gas while working. Patient was readmitted to this hospital in 1940. His mental condition at this time was worse than ever before. He stated frankly that he had given up hope and he blamed his physical invalidity for his failure in life. Physical examination showed severe burn injury of the abdominal wall. Blood pressure was 180/110; there was occasional tachycardia but regular sinus rhythm. Electro-cardiogram revealed no significant findings except sinus tachycardia. Lungs revealed moderate emphysema. Neurological examination was essentially negative except for marked tremor of the extremities which soon disappeared. Patient remained in bed for many weeks complaining of general weakness, precordial pain and meteorism. He cried frequently and stated again and again that there was no hope left for him. "Why does all that happen to me?" was his always repeated question when visited by the physician. He became increasingly hypochondriacal and commented on every little pain with grossly exaggerated complaints. Asthmatic attacks became almost regular daily occurrences and he worried so much about them that he refused to leave the bed. Objectively, there was a marked physical improvement noticeable. Blood pressure readings revealed a drop of the systolic pressure of from 20-30 points and of the diastolic pressure from 10-20 points. Psychotherapy was intensified and he began to respond. He was given an opportunity to unburden himself and he talked at great length about his family affairs and his financial obligations. He considered the whole situation to be "a mess" and seemed quite desperate. It was quite obvious that he dreaded the idea of returning to his home since he felt sure that his physical condition would never allow him to hold a job again and he feared that the relief payments would be stopped if he were discharged from the hospital. Following reassuring psychotherapeutic efforts, he became more cheerful, got up and began to take walks on the hospital grounds. This improvement was, however, of short duration only. He became seemingly afraid that he would have to go home and he became reluctant to

talk about himself. Asthmatic attacks increased in frequency and some seemed rather severe and required repeated administration of atropine and small amounts of adrenalin. He developed a bronchitis and had to stay in bed. Encouraging suggestions caused resentment on the patient's side, who capitalized on the upper respiratory infection—which, by the way, was mild and of short duration—to show that his physical condition was hopelessly impaired. He asked for steady attention, remained in bed for many weeks and seemed very depressed and preoccupied with thoughts about his physical state. All of his talk centered upon his asthma and high blood pressure and he lost interest in all other things. The nurses noted that he would develop asthmatic breathing as soon as the physician made his rounds. His increasing demands for injections were frequently met by injections of sterile water to which he often responded promptly. The situation became worse when his wife died unexpectedly. She had been suffering from high blood pressure and patient's grief resulted in marked depression. He now lives in steady fear that he may die from his high blood pressure and he accepts no reassurances whatever. Blood pressure readings show variations from 160/100-200/110. There is no evidence of renal impairment. In spite of his hypertension and the objective discomfort caused by it, there is a marked disproportion between his physical condition and his conduct as a complete invalid. He refuses to leave the ward and claims to be unable to walk greater distances than up and down the hall on the ward. Asthmatic attacks, although mostly mild in character, are almost regular occurrences. He concentrates all his thinking upon his illness and becomes easily upset and cries at times. Resignation, depression and deep seated resentment against his fate together with lack of confidence in his physical status characterize his present mental condition.

DISCUSSION :

The three patients present the typical clinical picture of asthma bronchiale. The clinical problems in each case have been studied and the allergic factors were established. The case histories as such strongly suggest the

necessity of correlating somatic and psychic factors. The three patients, although entirely different from each other in most aspects, have in common the outstanding mental features of depression or anxiety or both. This fact is of great interest since several authors, among them R. D. Gillespie and A. Hansen, have stressed the relationship of asthma bronchiale to mental depression. Hansen wrote: "It seems to me that not infrequently certain asthmatic individuals show to a more or less marked degree symptoms of manic-depressive disease and that asthmatic attacks predominate in attacks of depression." The three cases under discussion seem to show that there is indeed more than coincidence in the relation of asthma to depression. Case one represents the most severe type of depression. There is, to begin with, the hereditary component which predisposes the patient to a depressive type of psychosis. As in the case of her father, it is the involutionary period in which the psychosis develops. The psychogenic factors are obvious. The patient, a rather rigid type of person with a limited range of emotionality, had a hard life filled with sad experiences. She adjusts herself until she reaches the age of profound psychobiological changes. The strain which the home environment imposes upon her becomes too strong and she loses her emotional balance. It is at this time of her life that she develops bronchial asthma. The first attack is brought on by medicine to which she is hypersensitive. But the attacks persist and become more interfering and more severe. This development parallels the progressing depression. Individual attacks begin to coincide with moods of anxiety and depression. Such attacks can be relieved by indirect suggestion—therapy in form of injection of sterile water. It is clear then that by easing the emotional tension, dilatation of the contracted bronchial tubes can be achieved. One must assume that the enormous emotional tension reaches from the psychopathological sphere into the biological stratum by means of influencing the tonus of the autonomous system, one way as well as the other. A psychodynamical interpretation may reason that the asthma frees the patient

from her sense of guilt as to deserting her invalid brothers by proving to her that she is physically sick and unable to attend to her duties. Such reasoning would, however, be purely speculative and goes beyond the fundamental psychosomatic situation.

The second case permits perhaps a more psychodynamic interpretation. The patient, inherently well-balanced and successful in life, experiences an emotional conflict in regard to her marital situation. The first asthmatic attacks, rather mild in character, occur during sexual intercourse and at the time of the menstrual period. This leads to a decrease of sexual relations. The pattern of the asthmatic attacks is evidently in accordance with rejection of an unwanted situation. The further course of the asthmatic attacks makes this even more obvious. Her increasing invalidity helps her to a domineering position at home of which she takes the fullest advantage. She certainly does not know of this relationship but she accomplishes *de facto* what she could not otherwise do, namely, becomes the center of attention at home whereas she suffered before from emotional subordination. There is no kind of treatment that she does not receive, but none of them can prevent a progressing physical and mental decompensation. The psychotic manifestations, as shown in the hospital where she spent the ten months prior to admission to this hospital, deserve special attention. Although they may have been precipitated by over-dosage and possibly by summation of different drugs, one cannot overlook the significance of the phenomenological character of these manifestations since they seem to shed light on her deep-seated conflict. There are sexual ideas of reference which seem to be suggestive of repressed wishes. There are those dream-like illusions of returning to the dear places of her childhood, i. e., to her pre-marital life situation. There is the marked anxiety and fear of pending catastrophes indicating the panic in which she is thrown by the whole situation. The subsequent course and the impressive improvement in this hospital can only be understood when viewed together with her changed mental attitude. She is gaining insight, begins to understand that the asthma has actual-

ly enabled her to get away from the home environment. She realizes that she has to be "frank with herself," that she has to face her problems. The improvement of her mental equilibrium is accompanied by a progressive improvement of the asthma which is now better than it has been for many years in spite of the enforced abstinence from drugs. In conclusion, it may be said that the asthma and the psychopathological manifestations must be understood as coincident aspects of behavior in reaction to the life situation. This case demonstrates quite impressively the necessity and the success of a psycho-somatic approach.

Case three confronts us with a man who although of rather good native disposition, lacks success because of his low intelligence. He is rather impulsive in planning new business projects, but he does not have the necessary judgment and endurance to carry them out successfully. He reacts to the disappointments with depressed moods. He drinks heavily. The feeling of increasing insecurity undermines his mental balance. As in the other cases, it is the fifth decade of his life in which the asthma becomes an interfering factor. Previous attacks had been slight and caused no concern. The allergic status reveals him to be hypersensitive to things by which he had been surrounded for the greater part of his life while living on the farm. One can not fail to be impressed by the coinciding development of anxiety due to the feeling of insecurity, hypochondriacal preoccupation, asthma and essential hypertension. It is not the question of etiological priority which should be raised since this would necessarily lead to hypothetical and speculative reasoning. It is the integration of all the factors which forms the basis of the psycho-somatic approach. The mutual influence exerted by somatic and psychic factors can be clearly recognized if one correlates the development of functional pathological phenomena and the events of his life at the same time. There can be no doubt that the development of asthma and essential hypertension is to a great extent inherently, i.e., constitutionally determined. However, the pattern of such development and the degree to which it be-

comes prominent and interfering is undoubtedly influenced by the psychopathological reaction to the life situation. The anxiety caused by a feeling of insecurity together with the surrender to the idea of complete invalidity are positively precipitating factors for the asthmatic attacks.

The question has been raised as to whether an intrinsic relationship exists between asthma and the anxiety states. An attempt has been made to give the asthmatic seizure a symbolic meaning. The deep craving of the asthmatic patient has been compared with the crying spell of the helpless infant. The creators of such interpretation mean that the helplessness of the patient in the face of emotions which the ego is powerless to master reactivates his first memory of helplessness in infancy. The infant responds to the situation by crying, the adult finds the equivalent in the deep craving of the asthmatic attack. Thomas French finds that, "deep seated insecurity, a fear of loss of the love and support of parental figures, seems to run as a continuous underrun throughout the lives of our patients suffering from asthma." These theories, however, do not seem to answer the question as they fail to explain why some patients suffering from such deep-seated insecurity or from anxiety states develop asthma, others functional disturbances of the gastro-intestinal tract, again others cardiovascular phenomena, whereas the greater number of persons in such emotional states fails to develop any somatic manifestations. The symbolization seems, therefore, too speculatively founded as to be of use for clinical application. It must be considered satisfactory to assume that the constitutional disposition presents the potential etiological factor which becomes active under the precipitating influence of a disturbed autonomous equilibrium. The inherent disposition apparently creates a natural locus minoris resistentiae upon which the abnormal vegetative stimulation can act. The pattern of the attacks is determined by emotional factors through the autonomous system. From a therapeutic point of view, the question of an intrinsic relationship must be considered theoretical and of secondary interest. The psycho-somatic ap-

proach is successfully accomplished when the asthmatic attacks are viewed against the background of the life situation in as far as such aspect provides the basis for a rational therapy.

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BOOK REVIEWS

Shock Treatment in Psychiatry. By Jessner and Ryan. Cloth. Price, \$3.50. New York: Grune and Stratton, Inc., 1941.

This book seems to be primarily written for the medical profession as a whole rather than for the psychiatrists only. The technique is clearly and concisely described and the discussion of the subject gives a clear picture of these new types of treatments. Although the subject is not entered into in great detail and the theoretical aspects are only superficially treated, the reader is left with a clear picture of the shock techniques. All physicians should familiarize themselves with these newer treatments in psychiatry, even though they are applicable only to institutional work.

Nephritis. By Leopold Lichtwitz, M. D. Clinical Professor of Medicine, Columbia University. Pp. 328. Cloth. Price, \$5.50. New York: Grune and Stratton, 1942.

This excellent treatise on nephritis sets forth the author's personal ideas and convictions, formulated after years of observation and bedside experience. Clinical methods of investigating renal function are presented which seem adequate to diagnosis and prognosis, and which can be performed with simple equipment. It is doubtful, however, that the physician will familiarize himself with, or use, these methods instead of the usually accepted laboratory procedures. Throughout the volume there are many practical diagnostic and therapeutic suggestions which could only otherwise be acquired after years of experience.

Directory of Medical Specialists. Certified by American Boards. Second edition. Pp. 2,495. Price, \$7.00. New York: Columbia University Press, 1942.

Since the first edition of the "Directory of Medical Specialists" appeared, more than four thousand doctors have taken their Board examinations. This second edition therefore contains complete information about more than eighteen thousand certified diplomates. And not only is the book larger by that many new diplomates, but also the information about each doctor is more complete than it was before.

This book is not only a directory to medical speciality but is also an index to a trend in medical development—one which has grown more than twenty-five percent in the last two years. Needless to say, the value of this book to a nation at war is tremendous. To Washington officials, to army and navy administrators, as well as to local and regional selective service executives, the "Directory of Medical Specialists" is becoming increasingly useful.

A separate section is devoted to each of the fifteen American Boards, with both a geographic and a biographic listing of its diplomates. In addition, there is a complete alphabetic list of all the diplomates. In this list there are addresses and indications of specialty certification, while in the geographic section complete biographic information is given. The organization and examination requirements of each of the American Boards are explained in full.

These features make the Directory unique and invaluable to government officials, doctors (specialists or general practitioners), hospitals, social agencies, libraries, medical societies, business organizations, etc. It will help hospital officials to pass on the ability of candidates for staff positions. It will provide medical society officers with authoritative lists. Family physicians can form an accurate judgment of the qualifications and ability of specialists in any branch of medicine for the benefit of patients. Its many practical uses make it an indispensable reference tool for increasing hundreds of individuals and organizations.

(Concluded on page 136)

Editorial

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NEW POST WAR ERA

Our people at the present time have united with other nations to fight against principles which would result in the enslavement of humane souls and inter-racial hatred. We are fighting for principles that are higher than individual life, for we are striving for an acceptable way of life for all nations. If we are successful in establishing an everlasting peace in the future, every person must take his part. We physicians who have so much in common with all types of peoples should take an active part in establishing a healthful emotional attitude. No profession has a more intimate contact with his client and therefore, no profession can do more towards the development of mental health with the avoidance of intolerance, hate and selfishness. No matter what our future status of living will be, no peace can be maintained if prejudice and bigotry remain in the minds of the people.

FUTURE AIMS OF MENTAL HOSPITALS AND PSYCHIATRISTS

1. The safety of the community.
2. Adequate care and treatment of the acute and subacute mental and nervous illnesses, which would require the latest equipment and facilities for all types of diagnostic and therapeutic procedures.
3. Observation clinic for maladjusted and early stages of mental and nervous illnesses, so that the individual can receive adequate treatment without commitment.
4. Proper and humane care of the chronically ill which should not be merely custodial in nature but which should be marked by every effort to rehabilitate the individual at least to a satisfactory institutional life.
5. A mental hygiene clinic for diagnostic, therapeutic and preventive purposes.
6. The examination of problem cases referred by physicians, by the state, county and city schools and agencies as well as private agencies.
7. Training resident interns in psychiatry and neurology.
8. Training interns of the general hospitals in psychiatry and neurology.
9. Training young men and women for the nursing profession.
10. Training senior student nurses of all general hospitals in the art of psychiatric nursing for a period of three months through definite affiliations.
11. Training young men and women to be attendants, thus changing the present general concept of care of the mentally ill by untrained people. Through this means the position of attendants will have the same professional aspects as that of the nurse.
12. General education of members of the community through lectures, meetings and conferences.

13. Examination of cases for the state and city courts, penal institutions, industrial schools, schools for feeble-minded and other state, county and city institutions.
14. More strict grouping of cases in mental hospitals, separating the chronic alcoholics, senile and arteriosclerotics from the other types of mental illness.
15. Establishment of a research laboratory in every state hospital caring for more than 1000 patients, under a full time well qualified research worker.

THE MANUAL-MINDED CHILD

JOSEPH JASTAK, Ph. D.*

Farnhurst, Del.

The first tests of general intelligence were of the verbal type. They involved the comprehension or grasp of questions asked by the examiner and the ability on the part of the examined person to express his answers in language. Articulate speech and the linguistic interchange of ideas are so universal among men of all degrees of civilization that the use of language in mental tests is a fully justifiable procedure. The importance of language in our daily lives is so great that normal social adjustment without it seems unthinkable. Judgments of intelligence based on how well people understand and employ language are passed with considerable frequency and assurance by laymen and experts alike. The mother's complaint about Johnny being "dumb" because he can hardly speak and understand English at the age of ten is matched by the psychologist's statistical finding that the correlation between a person's vocabulary and his intelligence is high. If the relationship between mastery of language and intelligence is a close one, then Johnny's mother is right in suspecting general stupidity. The idea that good language aptitudes and intelligence somehow go together seems reasonable enough. Yet the absence of normal language development does not necessarily indicate lack of intelligence. Consider, for example, the congenitally deaf who rarely

learn to use language in conformance with their native intellectual capacities. Most of them reveal, despite special and prolonged training, a striking paucity of purely verbal concepts. Are they unintelligent just because their sensory handicap has prevented them from the normal use of language? Then, also, think of the numerous immigrants who through disuse and improper practice, have only a partial mastery of their mother tongue and a fragmentary command of English. Can their intelligence be accurately measured by language tests? Are they feeble-minded just because they have never developed the necessary language mechanics through which intelligence is expressed?

These and similar considerations have led to the early development of non-verbal and non-language tests which permit us to study a person's general capacity without the medium of language. Intellect enters into all our adjustments including language. However, intellect is not the only factor determining our adjustments and abilities including language. Furthermore, intellect, like the weight or volume of an object, is a scientific abstraction. It can be expressed through a multiplicity of channels without identifying itself with any of them. Thus language is only one medium of intellectual expression. It is not essential to the survival of intelligence. The normal development of speech and language also depends on non-intellectual personality traits and on opportunities to learn. High correlations between vocabulary and intelligence may well be due to spurious criteria of comparison or to unscientific concepts of intelligence. The true relationship between language mastery and intelligence, while positive, cannot possibly be a close one. No human response or achievement, whatever its nature or extent, can be the unequivocal result of intelligence alone.

The chances that Johnny's mother made a mistake in calling him "dumb" are great. One way of finding out whether she made a mistake or not is to observe Johnny's manual thinking. Should Johnny's vocabulary age be only 5 years at the age of 10 and should his manual performance age be the same as his actual age, it is certain that Johnny has nor-

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mal intelligence. The only conclusion we are justified in reaching concerning his defective vocabulary age is that he has failed to develop the verbal channel of intellectual expression because of some physical, psychological, or social interference.

Verbal tests are sometimes called abstract in contrast to manual tests which are supposed to be concrete. This view of the difference between verbal and manual behavior seems ill-founded. All intellectual abstractions can be perceived, comprehended, and practiced by direct action without the medium of words. Thus manual action involves the same highly conceptual thinking as do words. The difference is not one in degree of abstraction but merely in the form of expression. The engineer who builds an intricate machine may be no less intelligent than the philosopher who writes a treatise on the meaning of our existence. Their modes of expression differ, their native intelligence may not.

Why one person prefers to express his intellect by building bridges and the other by writing philosophical essays has nothing whatsoever to do with the degree of their intelligence. It is largely a matter of personality patterning.

Manual tests were introduced into clinical practice mainly to satisfy the demands of extreme emergencies such as occur in the mental examination of deafmutes and persons unable to speak English. Their worth in the study of handicapped individuals has been confirmed by many experiments as well as by daily clinical applications. In fact, their value has been found to be greater than was at first foreseen. Their use has subsequently been extended to the study of all people, normal and abnormal. Nowadays, no first-rate psychological study is complete without them. They not only increase the accuracy of intelligence diagnoses but aid in the evaluation of various character and personality traits such as drive, goal striving, orderly reasoning, resourcefulness, creative imagination, concentration, emotional stability, mental disorganization, educational deficits, motor coordination, etc. Consequently, high ratings on a manual test signify much more than do high ratings on verbal tests. An adult with super-

ior word knowledge may otherwise be a complete failure in all his life adjustments, whereas a person with a superior manual rating is not likely to be such a failure. On the other hand, a child with superior word knowledge may be successful in school, while a child with superior manual abilities may turn out to be a complete failure in school. The relationship between success in school and success in adult life is not a close one. The number of adults with mediocre school records and brilliant vocational careers is much greater than we are aware of. Conversely, the number of brilliant scholars who later disappoint themselves, their teachers and society in general by failing to rise to their expectations is far larger than need be. The successes of one group and the failures of the other are largely independent of intelligence. They are determined by the functional organization of the global personality and its interaction with the environment.

The value of several test ratings and of discrepancies between them in each individual case lies in the fact that they shed some light on the internal organization of the personality. For this reason it has been our custom to derive a minimum of three psychometric ratings for each individual. Three ratings are used not because they give a complete picture of the individual configuration but because existing tests do not permit a greater qualitative subdivision of ratings. Their subtests are not reliable enough for that purpose. The three quotients used most frequently in our work are obtained from a vocabulary test, a test of comprehension, information, and reasoning such as the Stanford Binet, or the Bellevue Verbal Scale and a manual performance test such as the Cornell-Coxe Scale or the Bellevue Performance Tests. The verbal and manual test ratings are averages of several different subtests within each category.

If intelligence were expressed equally well through the various adjustment channels, the I. Q.'s obtained by each person on the different tests would be about the same. For example, a child whose vocabulary I. Q. is 100 should have similar Stanford-Binet and Cornell-Coxe Performance I. Q.'s. Of course, daily experience teaches us that uniform

ratings of this type are the exception rather than the rule. The differences between the I. Q.'s of one test and another may indeed be very large. Thus one test may place the child in the feeble-minded group, while another may rate him average. Let us take a case from our clinic group. Fred's quotients (age 11 years, 7 months) are as follows: Stanford Vocabulary Quotient 52; Stanford-Binet Quotient 81; Cornell-Coxe Performance Quotient 106.

Barbara's (age 15 years, 3 months) ratings on the Bellevue Tests reveal a similar relationship: Bellevue Vocabulary Quotient 83; Bellevue Verbal Quotient 102; Bellevue Performance Quotient 116.

The demonstrated test patterns define our concept of the manual-minded child. The vocabulary in such children is low, the manual performance high. Three test scores yield six different patterns. All six patterns occur in children referred to the Mental Hygiene Clinic. Between July and November, 1941, two hundred and fourteen children of school age (6-16 years) were given complete psychological studies at the Clinic. They represent a fair sampling of the clinic population. The incidence of the various test patterns in the group is as follows: High manual, low verbal 45 percent; high verbal, low manual 31 percent; high Binet, low verbal and low manual 10 percent; insignificant diserepancies 14 percent.

It is apparent that the manual-minded child contributes the largest percentage of cases. We find that 45 percent of school children examined at the Clinic obtain the clear-cut non-verbalist pattern on mental tests. The tests from which these quotients are obtained are reliable scales. Repeated examinations indicate that the patterns are constant. Only radical treatment of an educational nature continued for several years or radical medical intervention is likely to cause significant changes. These changes usually consist of the narrowing down of diserepancies. They leave the pattern intact.

The test ratings are not only quite consistent in what they measure, but are supposed to be valid measures of intelligence. The tests are widely accepted as good intelligence scales.

There is no reason for doubting their validity on that score.

Acceptance of their validity as measures of intelligence does not lessen the diagnostic dilemma. For example, what shall Fred's intellectual level be? His vocabulary quotient is 52, his Stanford-Binet quotient is 81, his Cornell-Coxe quotient is 106. That all three ratings are psychologically significant, of that there can be no doubt.

If his word knowledge is a satisfactory criterion of intelligence, Fred is a moron. He is dull normal, if the Stanford-Binet is used for diagnosing his intelligence. The manual performance points to average endowment. A similar diagnostic problem must be met in the study of forty-five percent of clinic cases who represent the manual or non-verbalist pattern. The same problem exists in an additional 31 percent of cases who have the opposite pattern with significant diserepancies.

Intellect is a capacity and therefore a scientific abstraction. It cannot be identified with any one test or behavior adjustment. No test, be it vocabulary, or picture reasoning, or object assembly, or verbal comprehension, or any other, measures intellectual capacity in all individuals with equal accuracy. Capacity is the maximal power of receiving, containing, or absorbing. The capacity of a container is measured by filling it to the brim. In psychology the same conditions prevail. The reliable test on which a human being, in comparison with other human beings of his age, obtains the highest rating approximating his intellectual capacity best. In Fred's case, the "mental container" represented by the vocabulary test is only about half-filled; the Stanford-Binet provides enough contents to fill about four-fifths of the same "container." The performance test indicates enough power to fill it almost to the brim. "Almost" is used advisedly because the danger of underestimating human capacities is ever-present. It is possible that in some people even the highest rating does not adequately express their potential capacities. The common use of statistical averages in the form of composite I.Q.'s such as the Stanford-Binet frequently leads to the underestimation of human assets and to the simultaneous failure to discover

their liabilities. From the viewpoint of psychological therapy both errors may have the most tragic consequences.

According to the capacity theory, Fred is of at least average intelligence. Does this mean that Fred will make average progress in school? Not at all. The idea that intelligence and success in life or school are closely related has valid confirmation neither in scientific research nor in ordinary observation. Every human response or adjustment is an exceedingly complex affair. Intellectual capacity is only one out of several or perhaps many important vectors determining that adjustment. The influence of the other vectors is often so strong that failure is inevitable and predictable despite good intelligence. The manual-minded child is a failure in school regardless of his intelligence level. He has great difficulties in learning to read, write, and spell. He hates his English lessons and abhors grammar. He may be totally unable to write a coherent and intelligible essay. Wherever the use of language is important he may be counted out.

Arithmetic is often his strongest point. The most abstract phases of mathematics are mastered by him with facility. His excellence in number work often, though not always, saves him from being permanently condemned to a class of social incompetents. His practical resourcefulness and creative imagination in the concrete sphere are outstanding traits. Unless continued and misunderstood failure at school breaks down his morale and his nervous resistance, the manual-minded child turns out to be one of the most wholesome and substantial individuals in later life. His social usefulness and productiveness are increased, if proper home and school training eliminates his language deficiencies. The prognosis of vocational success in adulthood is a relatively simple matter in such cases. The truly feeble-minded individual is defective in every phase of his mental life. The manual-minded child is inferior or defective in only one medium of intellectual expression—language. His language development has its own typical growth curve. It is determined by the global personality organization and has little to do with intellectual endowment. In the majority of

such cases, language mastery reaches the highest test quotient in late adolescence, usually about ten years after they leave school.

Test patterns reveal the presence or absence of integrations within the personality. Personality disturbances are of many kinds and have many degrees. Some patterns, even those with wide discrepancies, point to a favorable therapeutic outlook. Maladjustments associated with non-verbalist patterns are benign, if the highest quotient is at least average and if the condition is recognized early and treated properly. The prevention of school failure and the early rehabilitation of the manual-minded child of good intelligence is one of the great educational challenges of our times.

THE NEGLECTED CHILD

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The purpose of this paper is to show the difficulties that arise when there are children in the home differing widely in intelligence and the resulting problems that occur. For example, when one of superior intelligence is contrasted with another child of definitely limited intellectual ability both children suffer in such a situation. The bright child is frequently neglected while the mentally deficient one suffers because of unfavorable comparison with the superior child.

CASE 1

ALFRED seemed a normal baby at first but refused to take solid food until eighteen months of age. (This was called a behavior problem.) He had frequent screaming spells and it was hard to hold his attention. Parents said he could understand directions; for example, when he was told to pick something up he would start to do it but if anything diverted his attention he never completed the act. He was slow in learning to talk. He had speech training for six months, but showed little improvement. Parents were told this was because of an inferiority complex, to build up his confidence and not to punish him. He slept only a few hours at a time, then would get up and walk around the room, jump on the bed until exhausted and then

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sleep another few hours. He is so destructive to furniture that parents have had to replace three sets of dining room furniture and have only the bare necessities in the other rooms. Mother states that he has a very good disposition but he will have a screaming spell if told to wear a different pair of shoes or over other trifling things. If he plays with other children it is only for a short time and then he must have his own way. He does not profit by punishment.

When given a psychological examination the chronological age was 10 years, 1 month; on the Kuhlmann-Binet Test, his mental age was 1 year, 7 months and his I. Q. 16. On the Vineland Social Maturity Scale his mental age was 2 years 2 months and his I. Q. 21. In the examining room he gives fleeting attention to test materials which are actually placed into his hands. He does not comprehend verbal instructions of the simplest type, but responds to several of his mother's orders in an habitual and entirely mechanical manner. He obviously does not grasp such simple commands as "sit down," "pick up the toy," or "give it to me," unless pointing and other physical hints accompany the verbal clue.

There is practically no spontaneous speech except "mamma" and "dad." He uses these words only when he sees his parents after their absence. He can say several other words but only by incidental imitation. He does not repeat words when asked to. His verbal behavior at home is similar to that displayed at the Clinie, according to his mother's information. When left to himself he keeps moving restlessly and violently. He runs back and forth across the room, jumps up and down, screaming and grunting, for several minutes at a time.

Some of his lack of comprehension and learning ability may be due to his excitability and almost total absence of concentration. But most of it is undoubtedly due to a true inability to accomplish anything constructive. His present functional level is that of a high-grade idiot.

In that home is another boy three years younger. He was given routine care as a baby but there was little time for love or compan-

ionship because Alfred wanted to be amused and quickly tired of everything he was given. He wanted someone with him constantly so the brother had to amuse himself as best he could. He had no playmates, for Alfred didn't know how to play with him and the other boys in the neighborhood would not come to the house. When he was old enough to enter school he wanted to invite some of the boys to the home, but said, "You know, mother, on account of Alfred—I can go to their homes to see them."

He soon found he was rarely invited to any boy's home. His mother could neither entertain nor leave Alfred long enough to call on other parents, or take any part in community activities. When the school suggested he skip second grade, the parents could not accept this (they said they could never think as much of him as they did of Alfred and they had planned so much for Alfred). The brother was soon labelled "That Jones child" and began to be considered different as by that time all the children knew something about Alfred. Community pressure made things so unpleasant that the family moved out of the city and the brother had to go back and forth on the school bus. When he returned home he thanked the bus driver and was labelled, "Prince Charming" by the other boys. When he entered the bus in the morning the only seat vacant was in the rear and the boys took delight in giving the "Prince" a slap as he passed them. In the third grade classroom he is a misfit. He can do perfect work but becomes careless, quickly loses interest and lacks concentration. He has excellent ability in art, but often starts several things, becomes dissatisfied with them and finishes nothing.

Though the parents are educated, refined people, this boy has picked up the vernacular of the street and uses profane and filthy language on the playground and indulges in other show-off behavior. He is also destructive which in the beginning undoubtedly was an imitation of his brother's behavior. The school authorities are very strict with him; have heard he has an "unusual vocabulary and is superior" but feel that even if this is true he cannot skip a grade now because he

is not superior socially.

He reads for hours at a time when at home but Alfred frequently comes into the room and tries to tear up his books; then he builds model airplanes or carves, but Alfred often upsets these things so they have to be put away. He tried to tell his mother something but she says she is tired and she thinks they "better take a little vacation from each other," so he goes off by himself.

He wrote the following poem when six years of age:

"Dear little Happy Toad
All grey and green
You're the funniest creature
I've ever seen
You stretch and you blink
You gap and you yawn
And before I know it,
Swish! you're gone."

His chronological age is 8 years 11 months, on the Stanford Vocabulary Test, his mental age 14 years 4 months, and I. Q. 161. On the Stanford Binet Test he has a mental age of 12 years 10 months and I. Q. of 144. On the Cornell-Coxe Performance Test he has a mental age of 9 years 7 months and I. Q. of 108. His language development is superior by training as well as native ability. The quality of his word definitions equals that of average adults. His language productions are excellent when given in small doses, so to speak. Complex comprehension problems are comparatively difficult for him. Strict reasoning problems are even more troublesome. Recall series depending on effective concentration and rote memory fall below his age norm. He is aware of his shortcomings, but his efforts in trying to correct them are half-hearted and ineffective.

In manual situations he is very variable. The composite result is that of an average child. This result is, however, a combination of very high and very low performances.

He likes to bluff. He insists he can do a certain thing and remember a drawing only to forget it completely or to disappoint himself and others. These lapses of attention and memory are striking personality inefficiencies.

He is of superior intelligence. His func-

tional efficiency in many practical things is far from superior because of inferior application, early fatigue, and loss or lack of constructive interests.

CASE 2.

CHARLES was born March 26, 1939. Labor was difficult and he was a "blue baby". At twenty-one months he started to hitch along on the floor on his stomach. About six months later he began to creep. He recently started to walk. He can say only five words and he is not toilet-trained. His father will not admit that he is deficient or slow in development. He blames his destructiveness and noisiness on his mother's lack of ability to discipline him. He will eat as long as anyone feeds him and will eat until he regurgitates. In regard to toilet training, the mother states that he smears feces whenever he has a stool. During the psychiatric examination, the child was extremely over-active and tended to destructive behavior throughout the clinic interview. He banged chairs against the wall, attempted to tear up the curtains, threw cushions on the floor and finally seated himself against the door where he rocked violently back and forth, banging the door with each backward motion. When diverted he placed himself on the floor, kicking loudly in rhythmic fashion with both feet. His posture was poor; he rolled about the floor a good deal but was constantly pleasant and did not react with temper to any frustrating action on the part of the examiner. Though restless, he was not resistive to examination.

Physical examination reveals most of the characteristic symptoms of Mongolism. The facies is typical. He has hyperextensible joints, excessive lacrimation and conjunctivitis. There is no fissure of mucous membranes at the present time but mother has noticed that he does have sore lips at times. He has frequent colds. There was no nasal discharge at present but coarse rales were present over the chest and mother states that he has had a cold with cough recently. Tongue was thick. At the present time patient manages his extremities pretty well, but he was obviously slow to learn coordination.

At the time of the psychological examination his chronological age was 2 years 9

months. On the Vineland Social Maturity Scale his mental age was 1 year 1.4 months, his I. Q. 41. On the Gesell Developmental Schedule his mental age was 1 year 1 month, his I. Q. 40. On the Kuhlmann-Binet Test his mental age was 1 year 1 month and I. Q. 40. According to test results, Charles is mentally defective at the middle-grade imbecile level.

A sister born July 5, 1940 seems especially bright, but she mimics everything Charles does. She is becoming as noisy and as destructive as he. She has also been difficult to train in toilet habits because of his example. The home could be very attractive if it were not for Charles.

CASE 3.

James was born Dec. 10, 1936. He was difficult to train in toilet habits but at the time mother did not think there was anything wrong until they realized that he should be talking. When examined by the Mental Hygiene Clinic in November, 1940, he could say "dog" and "bell." The parents insist that he understands everything they say to him. Most of the time he is disobedient and destructive. As an example of his behavior: he will knock the dishes off the table because he likes the sound of their breaking. He gets angry at the least provocation and will either break a window or butt his head against the wall. He tears off both paper and plaster and destroys anything he can. The family have been asked to move several times and have had difficulty in finding an apartment. At one time he threw a milk bottle out of a second-story window and barely missed hitting someone on the head. Another time father found him half-way out of a second-story window. It has been necessary to cover the lower sash of the windows, otherwise they dare not leave him in the room alone for he breaks the glass out of the windows unless it is covered. He throws stones and dirt at people when he gets a chance and has an exceptionally good aim. When taken for a walk he will lie down and bump his head on the sidewalk if something displeases him. He hits other children when he gets a chance and does not know how to play with them. When put to bed, he kicks and jumps up and down

until his mother rocks him to sleep. Parents say they cannot fix up the house because of his destructiveness and they are ashamed to have anyone come to the home.

He was given a psychological examination when he was 3 years 11 months old. His mental age on the Kuhlmann-Binet Test was 1 year 9.6 months and I. Q. 44. On the Randall's Island Performance Test his mental age was 1 year 9.6 months and I. Q. 44, and on the Vineland Social Maturity Scale his mental age was 2 years 5.4 months and I. Q. was 63. He is hyperactive, noisy, destructive and distractible. His attention is quickly attracted by any new thing but he refuses to play with it more than a few moments. Anything that he tires of he throws on the floor. He is probably potentially moron in intelligence but functioning at the imbecile level. He might be educable to slightly higher function under institutional care.

A sister born Dec. 27, 1935 had to be sent to the day nursery at an early age in order to protect her from James as he was cruel and abusive to her. She could not have any playthings at home because he destroyed them all. At the nursery she did many things to gain attention due to the fact that she had not been able to have much affection or attention from her parents. She was given a psychological examination with the following results: chronological age at the time of test was 6 years 4 months. Revised Vocabulary Test, mental age, 7 years 4 months, I. Q. 116. On the Stanford Binet Test, mental age was 8 years 0 months, I. Q. 126. In the Cornell-Coxe Performance Test, mental age was 6 years 7 months, I. Q. 104. She is adaptable, has good social judgment, plans efficiently and reasons logically. School achievement is at grade placement. She has superior intelligence.

On the psychiatric examination she insisted that she was an only child but when asked if she had a brother she said he was in a home. Her behavior indicated tension and a certain amount of anxiety and she became restless when questioned further about it. In other matters she showed no evidence of anxiety.

Children as well as adults vary widely in mental capacity. Science has found that they

vary in intellectual ability by nature as well as in physical traits. About two-thirds of them fall into the group called average and the remaining third is divided up into superior and feeble-minded.

In these case histories cited we find children at the two extreme ends of the scale in the same home. Their development, achievement, interests and emotional experiences vary widely. They can never be congenial or companionable and parents are forced to choose which child's needs to put first. Unfortunately, they usually feel that the feeble-minded child needs their care most and that no one else can care for that child's needs as the mother, refusing to admit that the child will be happy wherever he is, provided his physical needs are cared for. He cannot take his place in the world without supervision. The lower grade children are a menace or a burden on society and incapable of competing at all in the social order.

On the other hand the superior child is capable of becoming a leader of society or outstanding in one of the professions, yet he is the neglected one in the family.

In families such as we have been discussing we feel that it is urgent that the feeble-minded child be sent to an institution at an early age for the following reasons:

1. To free the mother so that she may give her time and care to the other child in the family.
2. To aid in development of proper habit formation by the other child—by removing a bad example.
3. So that the bright child may get the required security in the home through the affection and attention from the parents.
4. Enable parents to finance education of bright child rather than spending all their resources on special care for the feeble-minded one.
5. Remove a stigma so often unfairly applied to other children in the family.
6. To allow the bright child to develop normally by removing the cause which so often results in the development of personality difficulties shown by: (a) Destructiveness. (b) Show-off behavior to gain attention. (c) Inattention and faulty habits because

of imitation of the feeble-minded child. (d) Poor concentration because his ability is not recognized, school work is too easy for him and his innate ability is not challenged. (e) Poor social adjustment due to lack of opportunity for normal play and social outlets.

Activities for the bright child should be planned according to his interests which will occupy his time, challenge his abilities and not allow time for day-dreaming and absorption in his own affairs.

DESTRUCTIVE INFLUENCES IN THE LIVES OF MALADJUSTED ADULTS

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The maladjusted adult is generally thought of as a person who, due to his inadequate personality, gets into difficulties in his home, work and other life situations. His behavior is on an immature level and his responses to his problems are made in an unsatisfactory manner. This study deals with twenty such individuals who had so much difficulty in their various life problems that they were hospitalized at the Delaware State Hospital for psychiatric treatment. In no case was the patient insane. These people were in each instance diagnosed: Without Psychosis, Simple Adult Maladjustment.

The study is an outgrowth of the frequently expressed contention that the inadequate traits of the psychopath are inherent while in maladjusted adults the personality is the result of environmental influences. The purpose of the study is to detect causative factors in the lives of maladjusted persons and thereby emphasize certain principles of child guidance and training which, when observed, tend to prevent the unfortunate development of inadequate personalities.

Of the twenty white patients selected from the hospital files, eleven are male and nine are female. The ages range from eighteen to fifty-one years with twenty-nine years as a median. Examination of social histories reveals that the twenty patients come from representative American homes. They are American born except for one patient who was born

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in an American possession. Parentage for the most part is of American mixed descent. The religion in fourteen cases is Protestant; five are Catholic and one is Jewish. These patients live in urban communities of Delaware. The amount of schooling ranges from grade four to college, the median being high school graduation. High School graduation in four instances was followed by a year of business training. Study of the schooling suggests a restlessness, discontent and lack of stability in carrying out plans. One person attended several preparatory schools for brief periods after completing one year of high school. Another patient enrolled in a military academy after three years of high school training but discontinued because his mother thought the rules too strict and the school too far away from home. One individual discontinued school two weeks before graduation from high school. The three patients who had less than eighth grade education did much truanting. As is shown later in the study, the group is mentally capable of much more schooling than the amounts attained.

A number of occupations are represented by the patients. One man was a journalist and one woman taught school prior to marriage. However, neither of these persons were college graduates, one of them having no college training. Three were salesmen, two of them selling magazines. Three were clerical workers. One man was employed by a construction company, two drove bread trucks and one a delivery truck. One woman worked in a textile mill. Four of the men were employed in businesses of their fathers—plumbing, bakery, sheet metal, and a feed supply house. They, however, were restless, uncooperative and dissatisfied. Three individuals (two women and one man) had not succeeded in establishing themselves in any occupation, one of them being the person who is the only college graduate in the group. In brief the patients had average or above amounts of schooling and were for the most part employed, yet they were in positions which hampered and restricted full personality and intellectual expression. One might expect a person who lacked the maximum expression in work to find compensation in hobbies or rec-

reational activities. Part of the group were enthusiastic about outside activities. Six participated in sports and athletics. One, who had the least schooling (grade four) and who drove a bread truck, spent endless hours hunting, fishing and trapping. Another person, who was a high school graduate, after attending a series of private schools, was interested in chemistry, trees and medical books. One man was a scout master and enjoyed mathematics. Several found an outlet in cards and dancing.

Four of the group served prison sentences. Two of these were expert at embezzling and two were convicted on charges involving sexual perversion. Three others are known to have been delinquent. Eight of the patients drank alcoholic beverages to excess.

The marital status of the group is suggestive of much maladjustment. Ten had married. Disharmony and friction characterized all the marriages. Four of the individuals were divorced and two had married a second time. (They tended to have small families. Three had no children and five had only one child.) Ten of the group had not married. Of these, six revealed no serious love affair though several are reported to have been promiscuous sexually. The other four of the unattached patients had quarrelled with the person to whom they had been attracted or, in the words of one of the group, "had experienced disastrous love affairs." Again one asks why such failures, particularly in the relationship that offers happiness, challenge and expression?

These patients had grown up in emotional insecurity. In three of the childhood homes one parent died in the early life of the patient, and in six of the families the parents were divorced. Five of the fathers remarried during the childhood of the patient and four of the mothers entered marriage the second time. The father of one patient is described as alcoholic and both parents of another patient drank excessively. Two fathers were reported to have violent tempers and three mothers were described as being very nervous and high strung. Six of the persons have had one or more relatives in mental hospitals.

Furthermore, the order of birth succession

tended to place the patients in positions favorable to indulgence. Eleven of the group were the first children born to the parents, three were the youngest of several siblings and three others were left an only child at the death of a brother or sister. Several had half or step-siblings, this situation resulting in rivalry and friction.

In addition to the destructive influence of being reared in unstable homes these patients were handicapped by overprotection, indulgence, and in some instances rejection. Fifteen of the twenty individuals were overprotected and indulged. Relatives, in supplying information, made such comments as, "His mother protected him because he was a delicate baby", "his father indulged his temper tantrums", and "the parents tried to give the child everything he wanted." Among the fifteen cases who were indulged, in nine instances indulgence later was withdrawn through death, divorce, or being placed in the conflicting position of being outdone by a more attractive sibling. There were five instances of the patient having been a rejected child and lacking a normal amount of security and affection. As a whole the home environment and childhood training of these persons was directed by parents who were immature in their own personality make-up, as a result of which they inhibited the child's expression, developing in him feelings of resentment and stimulating emotional outbursts.

The period of hospitalization of the group of maladjusted adults ranged from ten days to thirteen months with a median of three months and three weeks under psychiatric treatment. The examination of the patients revealed that they were in good physical condition. Only three of the persons had a marked physical handicap. A young woman was almost totally deaf. A young man had a marked strabismic condition of the eyes and another man had lost one of his hands accidentally. Seventeen of the group were given psychological examinations. The results were most significant. More than half the patients were found to be considerably above average in intelligence, five rating superior and six rating very superior. Only one scored below average. His rating was

dull normal. More than half of these maladjusted persons had mental equipment, (but not the stability) to do college work well and to follow the professions. In reality they were doing work in which they were not especially interested and which lacked challenge, responsibility and opportunity for advancement.

The families of these maladjusted adults have in many cases referred to the patients as usually likable, friendly and good natured when they were pleased. Only a few have been described as reticent and withdrawn. The group as a whole, however, was reported to be sensitive, quickly angered, excitable and emotional. Several, according to relatives, show little regard for others, are irresponsible and demand much attention. The hospital physicians, in reporting on the patients' adjustments, have referred frequently to the immaturity of the individual in such terms as: "The patient reacts childishly"; "Insight and judgment are immature"; "The patient is an individual of inadequately developed personality"; "The patient pouts in a childish manner and at times sulks and acts quite babyish"; "It is evident that the patient has been unable to face some of life's problems"; "He developed aleoholic and delinquent trends in the setting of early spoiling"; "A pampered child always protected from the consequences of his misdeeds." As the patient improves, the psychiatrist makes such comments as: "—to help the patient understand his need of reorganizing his personality to meet situations in a more adequate fashion"; "—to help the patient toward a more satisfactory adjustment of her emotional problem."

Why have these people remained at immature levels of personality development? It is true that there have been emotional strains and unhappinesses in their family relations but there have been unfortunate happenings in the lives of many well adjusted persons. In fact, frequently personality growth is stimulated by conflicts, disappointments and hardships. These patients have had more than unhappiness and worries. They have had their personality growth repressed by over-protection, indulgence and, in several in-

stances, rejection. Rosanoff (1) refers to a child gradually and progressively developing until he is released from dependency and is able to carry domestic and social responsibilities in a manner that is happy for himself and others concerned. These persons were not permitted to develop judgment, independent thinking, and emotional control, and to gradually emancipate themselves from the dependency of childhood. The problem which precipitated each of these patients' coming to the State Hospital for psychiatric treatment was in every instance immature behavior—extreme temper outbursts, resentment toward relatives, uncontrolled and hysterical actions, physical ailments of psychogenic origin, excessive drinking, stealing and sex perversions.

These maladjusted adults have been deprived of normal opportunity to develop wholesome, stable, mature personalities. Maturing physically or becoming of age does not automatically enable the youth to adjust to the complexities and responsibilities of adult living. These patients have had years of thwarting by being overindulged and by living in friction and emotional insecurity instead of years spent in progressively developing initiative, resourcefulness, self-confidence, independence, sociability and emotional control. They have been denied years of experiencing the meeting and facing of problems, overcoming difficulties which are modifiable and accepting and adjusting to those which are beyond control.

The study strongly suggests that adult maladjustment results from retardation in personality growth, and indicates the urgent need of prevention. The challenge is particularly to the social worker who is equipped through training and experience to help people understand the dynamics of human behavior, and the principles of child and adolescent development. Furthermore the social worker is in the position to direct severe cases of maladjustment to the psychiatrist and to consult him concerning others. Insecurity in the home resulting from friction and rivalry often is reduced when emotional parents are supplied the release that comes with talking about their problems and being given an understanding of them. Frequently the parent

who is over-protective permits the growth of independence in the child when the parent no longer has the need of keeping the boy or girl dependent upon him. Likewise the rejection of a child may be overcome by understanding the reason for the resentment. Children in turn, may drop undesirable behavior when the parents' tenseness toward them is withdrawn. There are endless opportunities to start babies and small children in the formation of habits which are a part of wholesome personality growth.

The psychiatric social worker has the additional privilege of assisting the psychiatrist by preparing the home for the return of the hospitalized patient through working with the family to change environmental conditions from destructive to constructive influences.

(1) Rosanoff, Aaron J.: *Manual of Psychiatry*, John Wiley & Son, Inc., New York.

Book Reviews

(Concluded from page 124)

Surgery of the Ambulatory Patient. By L. Kraeer Ferguson, M. D., Assistant Professor of Surgery, University of Pennsylvania. Pp. 923, with 645 illustrations. Cloth. Price, \$10.00. Philadelphia: J. B. Lippincott Company, 1942.

This is a superior type of text in minor surgery—superior in both style and content. The work is divided into three parts: (1) Surgical Principles and Lesions; (2) Regional Surgery; (3) Musculo-Skeletal System. The lesions discussed are those usually met in the office or out-patient clinic. Several of the chapters were written by colleagues. The treatments advised are orthodox, and the text permits of no misinterpretation. This is a book that can be heartily endorsed.

Synopsis of Ano-rectal Diseases. By Louis J. Hirschman, M. D., Professor of Proctology, Wayne University. Second edition. Pp. 315, with 194 illustrations. Cloth. Price, \$4.50. St. Louis: C. V. Mosby Company, 1942.

In his second edition Hirschman maintains the syruptic type of the first edition, but the thorough revision has added 40 pages and 14 illustrations. The 12 colored plates are excellent. The work covers the majority of ano-rectal lesions, but the operative techniques have been limited to those usually done in the office. The text is quite readable, the style being neither terse nor verbose. It can be recommended as an eminently satisfactory text for students and general practitioners.

